

FLORIDA HIGHWAYS



Vol. V

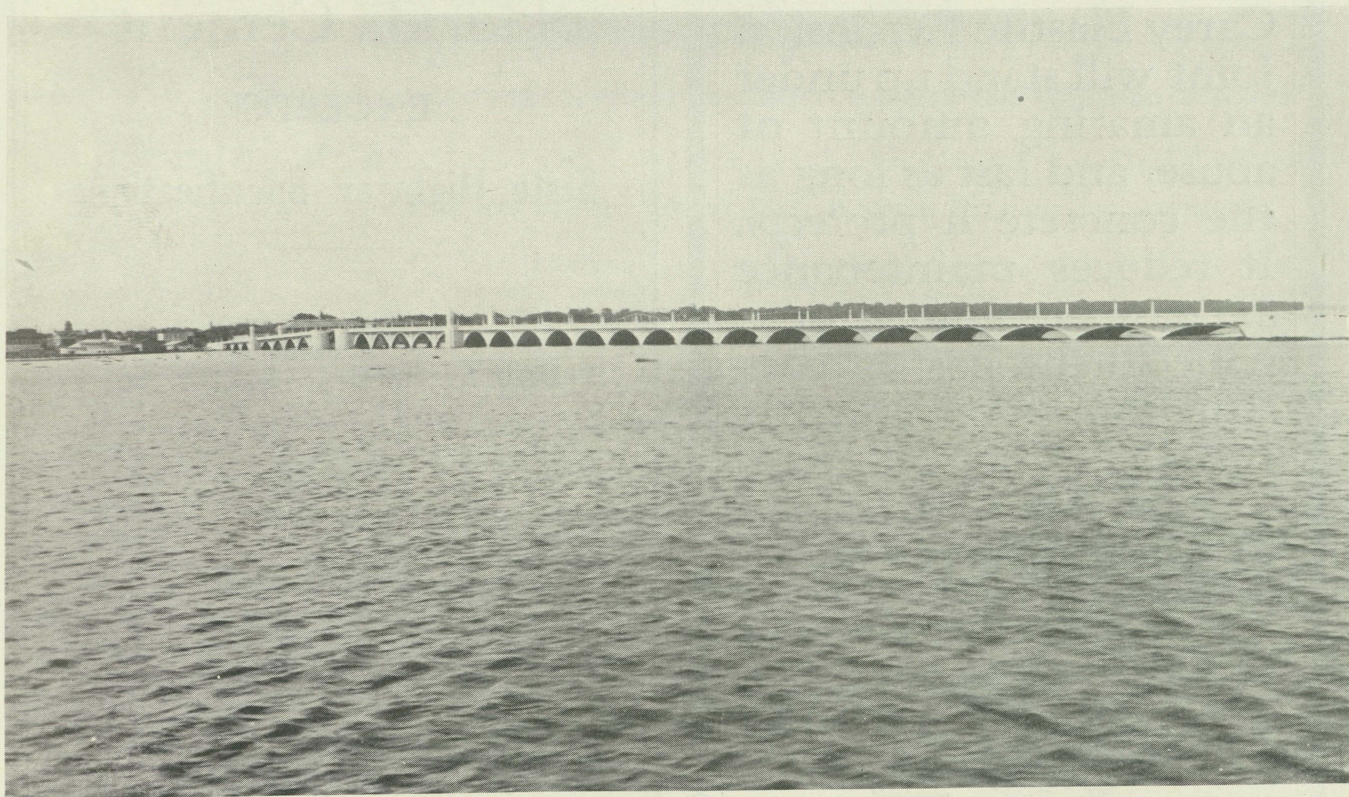
JULY, 1928

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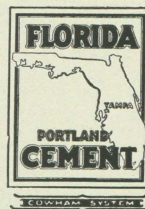


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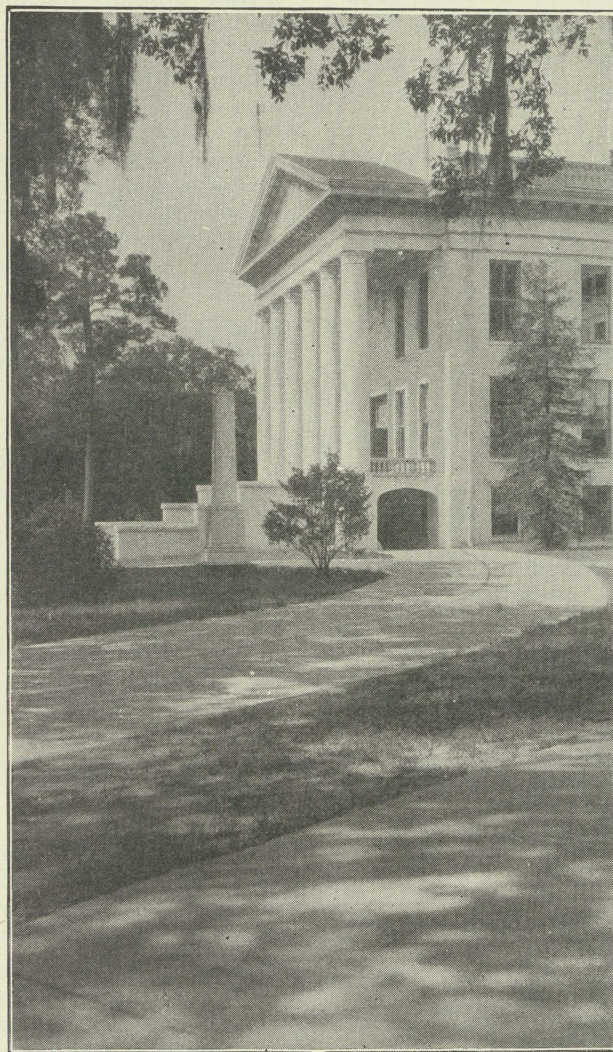
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F L O R I D A

Vol. V
No. 7



H I G H W A Y S

JULY,
1928

Beautification of Dixie Highway in Brevard County

By Russell A. Field, Vice-President Brevard County Dixie Highway Beautification Committee

THE Brevard County Dixie Highway Beautification Committee, composed of men and women workers in that county anxious to see the Dixie Highway made attractive to those who use it, is extremely gratified at the progress being made on the work.

From the start problems were met which required careful handling for successful solution. The plans, as finally adopted and as prepared by M. J. Daetwyler and Landscape Architect Reinsmith, of Orlando, are the answer to all of the problems and have been officially pronounced by the State Highway Department as eminently satisfactory to it and as a standard which would be offered to other counties when they request information along the lines of highway beautification.

An innovation in the plans for beautifying the Brevard County Dixie Highway is that, with the exception of the incorporated cities, no plantings will be made on the highway's sixty-six foot right of way. In other words the trees and shrubs and flowers are to be placed beyond the limits of the Highway where they will not interfere with the maintenance of the same or be disturbed by a change in grade or a possible widening should it ever be ordered.

The Brevard plan of beautifying is based on natural treatment. Straight line plantings are in most cases to be avoided. Masses will be employed wherever possible, and plots where nature has outdone human hands in the way of beautification will not be disturbed other than the possible removal of rubbish, dead wood and the like.

Special study has been made as to the proper things to plant from the standpoint of hardiness, etc., and careful preparations have been made for maintenance, working the ground, watering, and the like—so important in all beautification plans.

Rivalry among the County Commissioners as to who will have the best mile of the initial planting is already great and rapid work is being made in clearing the ground for the four commissioner miles as well as three others for which the funds have already been provided.

The entire length of the Dixie Highway in Brevard County is seventy-two and one-half miles, and at each mile distance a neat post painted yellow with black top has been erected on which the letters B. C. and the mileage appear. These not only will be a help to the tourist but a great aid to the architect in a definite location of his beautification plans. Around

the base of these mileposts will be planted low, growing, bright-colored flowers in a circle about three feet in diameter and in some instances flowering vines will be used for this part of the beautification.

In the Fall prizes will be offered for the filling station, restaurant, and fruit stand showing the greatest degree of beautification, inspection to be made at three-month intervals and the final reward at the end of the year.

Picnic grounds for tourists are also to be established at suitable points at intervals of six to ten miles from which the proper approaches from the Highway will be provided and other conveniences placed at the disposal of those who wish to use them. There will be signs at points along the Highway directing the tourist to the next picnic ground.

The entire plan has been most carefully worked out and promises to make the Dixie Highway along the beautiful Indian River more attractive than ever.

Work Going Forward on Demonstration Miles of Highway Beautification Here

Highway Beautification Plans of Brevard Said to Be So Good Are to Be Used as Model for State

WORK on the actual beautification of the Dixie Highway in Brevard County is under way.

Three of the miles in charge of the County Commissioners have already been grubbed and prepared for planting and even in the grubbing and preparation of the soil the landscape has been already beautified.

Just beyond the fork in the road south of Bonaventure, where the old Dixie Highway joins the new, Commissioner C. R. Copeland is having his mile put in shape for planting and he is ready to receive bids according to the specifications of M. J. Daetwyler and Landscape Architect W. H. Reinsmith, who have a contract for the beautification plans.

Good progress has been made on this work of preparation and the things that are to grow should be in place before the rainy season is far advanced. Arrangements are also being completed for maintenance and watering, a feature of beautification which is of the utmost importance.

The mile of Commissioner John D. Rhodes, of Melbourne, in the vicinity of Grant, is being prepared quickly. The location is unusually good and the plans call for a combination of straight line and mass plantings, which are bound to bring forth enthusiastic comment.

The Chamber of Commerce of Melbourne has recently made a careful analysis of the possibilities of Dixie Highway beautification within the city limits, conferring with Mr. Daetwyler as well as Highway District Engineer R. J. Cassie, of Fort Pierce—all towards the end of co-operating perfectly with the plans adopted by the Beautification Committee.

The mile of Commissioner George C. Brockett, just south of Titusville, is also being prepared vigorously. The work is being done by county convicts and substantial progress has been made.

Commissioner Brockett is a lover of flowers and a successful grower of many rare varieties. To his enthusiasm and vision of what the Dixie in Brevard County would look like were it properly beautified is due in a great measure the success of the entire plan.

The other commissioners are watching the work of Mr. Brockett and are doing all they can to equal or exceed his efforts, in fact there is much quiet rivalry among them as to who will have the best looking mile and undoubtedly some suitable award will be made by the Beautification Committee to the commissioner who wins out.

The mile to be planted in the north of the county

at Mims, Commissioner Arch Donaldson will soon have started.

There are three other miles in the entire length of the Highway to be beautified at this time.

It is interesting to know that the State Highway Engineer, J. L. Cresap, has recently expressed complete approval of the plans and stated that they would be recommended as models to other parts of the State. This is gratifying to those in Brevard County who have worked so long and so hard to get the plans right.

Selection of the three miles above referred to is being carefully made and they will undoubtedly be spotted in different parts of the county so that a stranger passing through by motor will get the impression of continuous beautification.

Requests are already coming in to the committee from individuals who want instructions as to beautifying their own property by plantings along the fence line and flowering vines that would cling to wire, spreading and blooming profusely.

A mass meeting of the Garden Clubs of the county has been suggested for no distant date, the same to be addressed by M. J. Daetwyler and Landscape Architect Reinsmith, in order that the Garden Clubs may know just exactly where they fit in the Highway Beautification scheme; where they can be of greatest help, without which the greatest success of the project would be impossible.

The co-operation of the East Coast Railroad at points where its right-of-way comes close to that of the Dixie Highway is also to be asked.

Those who have occasion to travel the Dixie Highway from one end to the other will notice yellow posts with black tops on which appear the letters "B C" and the number of miles from north or south that the posts measure.

It is the intention to beautify the ground around the base of these mileposts to a distance of a three-foot circle. The plantings to be put in will soon be suggested; the ground worked up and requests made of existing organizations to take care of the same.

Altogether much progress has been made on the plans for beautifying the Dixie Highway in Brevard County. Greatest co-operation prevails and much further progress has been made in Brevard than in other parts of the State.

It is the hope of the State Highway Department to have the Brevard type of beautification adopted from Jacksonville to Miami.—Cocoa Tribune.



Project 59. Concrete Pavement, Road 1, Jefferson County

The Footprints of the Engineer

By James B. Weaver, Des Moines, Iowa

THERE have been but two notable periods of road building in the last 2,500 years. And the vitality and achievement of every civilization that has flourished in that period are reflected in its attention to its public highways, to its system of human communication. Regarding these roads it is an illustration of the irony of fate that while the rulers and politicians of every period have added greatly to their fame by inscribing their names upon a multitude of pillars and milestones, the men who actually planned and supervised the construction of the great highways of the ages have had to be content with some obscure line in a musty pay roll, consigned on completion to some dingy vault or wayside bonfire. In some cases the road itself, redolent of antiquity, has survived even the name of the ruler and politician, and stands today proof of a civilization that has otherwise largely vanished. Note the case of the Incas. Now sweeping across the great plateaus, now bordering the ocean, or again hanging suspended at an elevation of 12,000 feet along the shoulders of the Andes, that mighty road, 20 feet wide, of cut stone, runs from 100 miles north of Quito to Cuzco, thence on for 1,500 to 2,000 miles toward Chile. With deep foundations and surfaced with cut porphyritic stone, it challenges us to visualize in imagination a people whose footfalls are hushed and whose civilization vanished, leaving this proof of an astounding progress.

The spectacular success of Alexander was only possible by reason of the great Persian highways trod by his legions. He achieved with his army the then unheard-of speed of 20 miles per day. There was the so-called "Royal Road," that ran from Ephesus on the Aegean to Susa on the Tigris; another connected

Mesopotamia with Egypt, and others of lesser note. Certain it is that shattered dynasties and transformed civilizations were the result in no small part of the work of the men who before the Christian era built the main roads of the Orient.

The magnificent roads of Rome were commensurate with her proud place in history. They shaped her destiny, first making possible her far-flung empire; and then in the closing days opening the way for the barbarians who stormed at the gates of the Imperial City. Their location determined by geography, these roads ran from the capitol to the far corners of the empire. The Appian Way ran southeast, first to Capua, thence to Brindisi on the Adriatic; the Flaminian Way northeast to Rimini on the Adriatic; the Via Ednatia, from Durazzo to Constantinople, thence to Alexandria; the Via Aurelia, from Rome to Gaul, thence to Cadiz; another from Milan to Boulogne, and many more, splendid arteries for the circulation of her legions and for the commerce of a world empire.

And they were indeed magnificent roads, many constructed of four layers—first large stones, next rubble, then smaller stones and concrete, and finally, as in the Via Appia, surfaced with cut polygonal stones. Many sections survive, and for thousands of miles the work of Roman engineers is today the foundation of existing roads in Italy, France, Switzerland, Spain, and even Egypt.

Hannibal's army traversed these roads at a speed of 24 miles per day. Caesar narrates a journey of 800 miles in 8 days. Aristides, the rhetorician, in the winter of 155-6 A. D., in a journey of 100 days from

(Turn to Page Five)



Florida Highways

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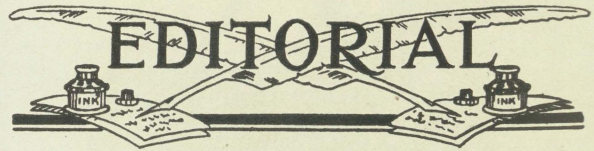
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BEAUTIFICATION

Elsewhere in this issue we are presenting two articles which deal with the progress which is being made by the Brevard County Dixie Highway Beautification Committee. This committee consists of all civic organizations in the county, such as Kiwanis and Rotary Clubs, Chamber of Commerce, women's organizations and a number of individuals who own property along State Road No. 4 (Dixie Highway) in that county. The committee works under and in co-operation with the Board of County Commissioners, the several city councils and the division office of the State Road Department.

The committee has caused to be prepared under the direction of a capable firm of landscape architects, plans which cover the entire seventy-two miles of the road in Brevard County. Plans and specifications are prepared which govern the planting and designate the types of trees and shrubs for each individual area, together with the number and estimated cost of each. This data is then submitted to the Beautification Committee, which calls for bids for the furnishing and planting of shrubs on each mile of the road.

The opinion has been expressed that the Brevard County scheme is probably the most modern in the United States and an outstanding feature is the fact that it is carried on entirely outside the State's standard sixty-six foot right of way and leaves the selection of varieties to the landscape gardeners who can take into consideration soil changes, etc., and who strive to carry out a color scheme which will insure flowers in bloom during each month of the year.

One of the articles which we present was prepared by Mr. Russell A. Field, of Cocoa, Vice-President of the Committee, and it is Florida Highways' information that much of the credit for the organization and progress which is being made is due to Mr. Field.

We are glad to present these articles as timely, interesting and valuable.

JOHN R. STEWART KILLED

Just as we go to press we are shocked and grieved to learn of the death of John R. Stewart, Superintendent of Equipment, who was killed July 17th in a motor accident in South Carolina.

Mr. Stewart had been to West Virginia to visit his mother, who was ill, and returning was killed when the automobile in which he was riding with his brother-in-law was struck by a railway train in the vicinity of Columbia, S. C.

He had been in the employ of the State Road Department for a number of years in successive positions of project engineer, division engineer and superintendent of equipment division, which position he held at the time of his death. He was regarded as one of the most faithful and efficient employees of the Department and his death comes as a great sorrow to his many friends connected with the organization.

Florida Highways extends sincere sympathy to his family in their bereavement and grieves with them in the loss of this fine citizen and outstanding engineer.

THE FOOTPRINTS OF THE ENGINEER

(Continued from Page Three)

Asia Minor to Rome, tells of making 50 miles per day—"as fast as the couriers." A notable section of these roads centered at Lyons, then the capital of Gaul, and the identical highways along which Roman chariots rattled in the first century today resound to the honk of the motor car.

Though military considerations were the original incentive in building of Roman roads, their influence, as is always true, stretched far beyond things military. Italian culture permeated the provinces. Christianity radiated from Rome in all directions. The colonies contributed to the Empire both men and ideas. Seneca, the naturalist and philosopher, was born at Cordova, his mother a native Spaniard. The Emperor Trajan was the son of an Iberian officer from along the Pyrenees. Pliny's mother was a Spaniard, and there are many more examples. These splendid roads gave cohesion to the Empire. No tariff barriers separated the peoples that composed it. The Roman Empire in the freedom of trade that it imposed among the races governed, achieved an economic unity that has never returned and is today the dream of the greatest economists in the Old World. The ideal of autonomy for small States that had been the ruin of Greece, found no footing among the Romans. Just as when the colored boys in the South three years after the World War suddenly stopped buying silk shirts a panic occurred in banking circles in Japan, so Cicero says of the economic unity of the Roman Empire:

"The credit of the Roman money market is intimately bound up with the prosperity of Asia; a disaster cannot occur there without shaking our credit to its foundations."

Traveling in Europe in Roman days was easier and safer than at any time since until the nineteenth century, and in Asia Minor was safer in Paul's day than it is in our own time. The work of the highway engineer as the servant of the State was the fundamental fact at the root of "the grandeur that was Rome," gave wings to her dominion, sent her legions to the margins of the known world, and brought to the arena of her public life talent from all the races within her boundaries. The milestone was her invention, and it is to be regretted that instead of having thereon inscribed the name of some tyrant, whose only good deed was often the ordering of the road, we might find along at least some great highway that has survived the centuries a few stone markers inscribed: "Ordered by the Emperor, but built by Peterius Smithicus, an honest engineer who knew his job."

With the passing of the Roman Empire notable road building ceased until the nineteenth century. The long lethargy and chaos of the Dark Ages were illuminated by no outstanding improvement in facilities for communication. In 1339 and again in 1668 the British Parliament was prevented from meeting by the state of the highways. At the beginning of the nineteenth century travel from London to Dover was still dangerous. In 1635 it took two months to get an answer in London to a letter to Scotland or Ireland. Old Dr. Johnson thus taunted Boxwell: "The noblest outlook that a Scotchman ever sees is the highroad to London," and that great highroad did in fact transform the Scotch from enemies into allies. Writing of conditions in England, as late as 1630, Macaulay says:

"When the lord of a Lincolnshire or Shropshire manor appeared in Fleet Street, he was as easily distinguished from the resident population as a Turk or a Lascar. His dress, his gait, his accent, the manner in which he gazed at the shops, stumbled in the gutters, ran against the porters, and slid under the waterspouts, marked him out as an excellent subject for the operations of swindlers and banterers."

It is only within a century that England has established anything like a system of improved highways. In that century she has become an industrial hive, with splendid roads reaching every corner of the island and to the remote corners of Scotland. With an area for England and Scotland only one-tenth larger than Minnesota, the home population of 45,000,000, freely circulating over a network of fine roads, maintains its prestige as the center of a world empire.

In the Far East she built the Grand Trunk Road. Stretching across India for 1,600 miles, from Calcutta at the mouth of the Ganges to Peshawar on the borders of Afghanistan, the imagination is stirred by Kipling's familiar words from the mouth of Tommy Atkins:

"We're marchin' on relief over India's Sunny plains,
A little front o' Christmas-time an' just be'ind the Rains;
Ho! get away you bullock-man, you've 'eard the bugle
blowed,
There's a regiment a-comin' down the Grand Trunk Road;
With its best foot first
And the road a-sliding past,
An' every blooming campin'-ground exactly like the last
While the Big Drum says,
With 'is 'rowdy-dowdy-dow!—
'Kiko kissywarsti don't you hamsher argy jow!'"
(Which is native for "Why don't you get on?")

And when the great Russian Bear peers southward over the range of the Caucasus what he sees is the Grand Trunk Road, supplemented by a network of rail lines running everywhere up to the foothills of the Himalayas. It is Britain's warning to keep his paws off India. The work of the highway engineer guards Britain's stake in India.

Penetrating the gloom that had shrouded Europe for a thousand years, in the fifteenth and sixteenth centuries came that marvelous awakening termed the Renaissance—literally the rebirth of the Greek passion "to know." First taking the form chiefly of art and literature in Italy; free thought in Germany; colonization, commercial expansion and sea dominance in England and Spain, the spirit of the Renaissance has refashioned the world. The discovery of America and the spread of the ideal of democracy were its direct product. Out of it our modern scientific era was born with every phase of man's amazing mastery of the forces of nature, which is the mark of our own time. The first years under the American Constitution, the closing of the French Revolution, the Napoleonic era and Stephenson's locomotive were essentially contemporaneous. It was the opening of an age of daring initiative.

A new era dawned, the scientific era, when man began to throw the harness of his inventive genius over the forces of nature to make them do the work of the world. There loomed dimly in the background of the world's future, the mighty citadels of the Age of Iron, with its babel of tongues, its tense industrialism, its deafening clangor, its hungry mouths and its competitive zeal. Here in America this era found us intent also upon the mastery of a primi-



Road 2. Surface Treatment on Lime Rock Base, Marion County

tive continent, the richest prize that ever fired the imagination of a great people. The country was too new and accumulations of capital too meager for serious attention to scientific road building. The railroads made a frenzied effort to keep pace with the movement of the pioneers in their race for homes and for the exploitation of the riches of a continent:

"Something hidden, go and find it.
Go and look beyond the ranges,
Something lost beyond the ranges,
Lost and waiting for you. Go!"

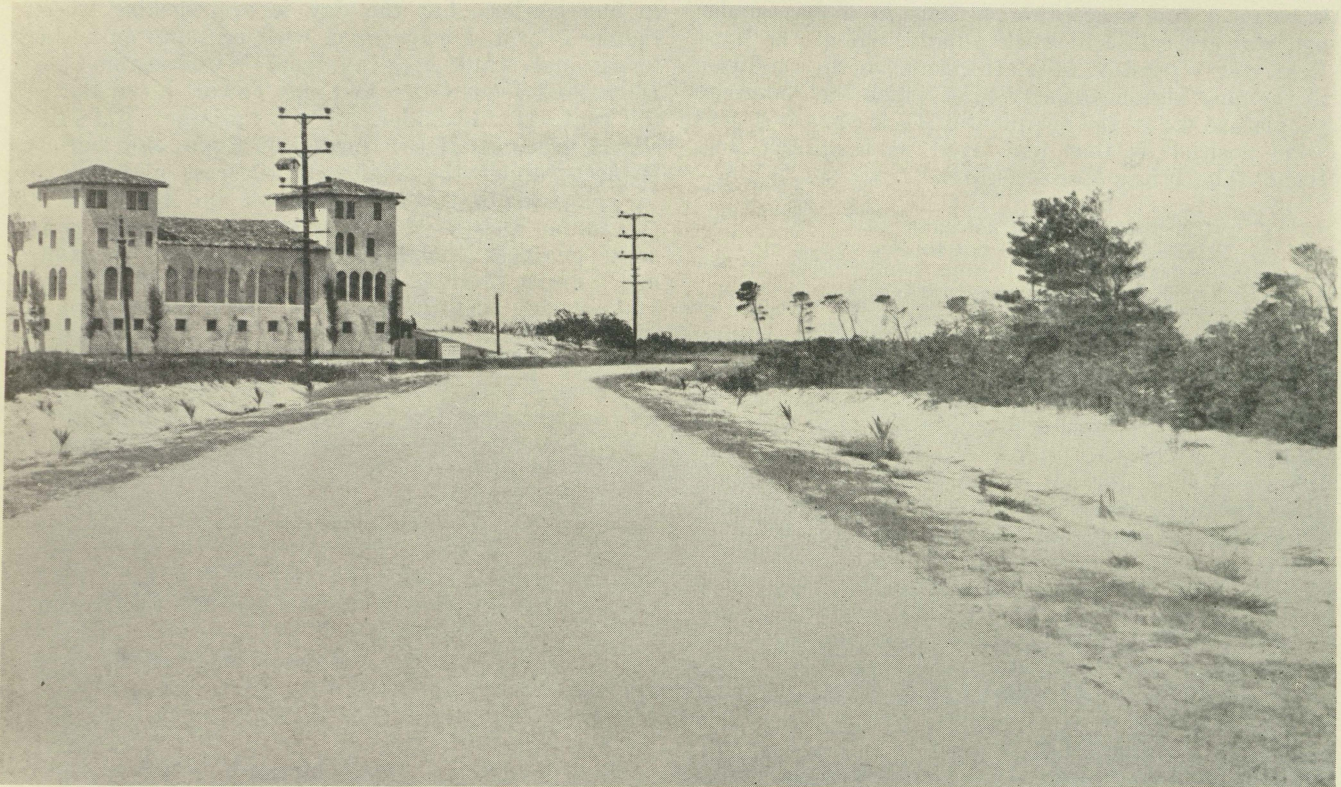
As for the roads, there were few that deserved the name. Water and rail transportation held the attention of the nation. Highway building was scattered, mainly ineffective, with little co-ordination and without scientific guidance. There were a few notable exceptions, but anyone of us who, even in the seventies, took his turn at "working the roads," as I did, has a vivid recollection of how futile was the effort and a realization today of the untold millions of public moneys squandered by the primitive methods in vogue.

But while indifferent to highway construction, we shared in all the magic of an astounding period. For America, as well as for Europe, the close of our own Civil War opened an era that reads like a page of romance. Eighteen hundred and sixty-nine had seen the Atlantic and Pacific linked by the first transcontinental railway, and the first ocean cable had just brought the news of the world to the breakfast tables of two continents. Eighteen hundred and seventy-three sent the cable cars climbing the hills of our cities, while in 1875 the genius of Bell annihilated distance in the transmission of the human voice. The next few years mankind, emerging from the gloom of the candle, touched a button and said, "Let there be light," and lo, the lightning leaped to pillar and tower and from cellar to garret and stood poised, the

instant servant of humanity. In 1877 Holland's submarine nosed its way through the harbor's slime, puny but unquestioned parent of the modern U-boat, 300 feet in length, with its cruising radius of 8,000 miles. In 1880 the electric railway made possible the far-flung confines of the modern city.

There quickly followed the linotype, the guilty parent of the penny extra, and the internal combustion engine, the latter probably the most revolutionary triumph in all the realm of mechanics. It made possible the automobile, and by the genius of Wright and his dauntless followers has taught this age to "hitch its wagon to a star," or at least to launch it in the path of the storm, and has given to man a fourth dimension peopled equally with terrors and delights. Eighteen hundred and ninety-six brought Marconi's wireless, and the cries of "those in peril on the deep" were heard across a thousand miles of storm-swept sea, and 1906 saw those frowning citadels of Mars, the dreadnaughts, steaming out of the harbors of the world, grim floating fortresses built to express a nation's will in the thunder of their mighty guns. One superb instance of man's modern mastery of force is found close at home in Keokuk in my own State, where he has gathered the power of 250,000 horses, the thunder of their hoofs changed to the crash and roar of giant turbine engines, their silken sides become 10,000 glistening shafts, and their neigh that rang out over the prairie transformed into the hum of contented industry.

Even in the old days of King Phillip there was a proposal to build a canal across the isthmus of Panama. It is said that the King submitted the matter to the then chief repository of learning, the Monks, asking their opinion. After many days they made answer to the King, saying: "Your Majesty, it can not be done. It is forbidden by God, for is it not written in the Great Book: 'What God hath joined together let not man put asunder?'"



Project 641-A. Road 4, Palm Beach County

But our own age, more adventurous, if less reverent, has drawn across that neck of land a beautiful silvery stream, upon whose bosom is mirrored the commerce of the world, and upon every mile of its margins is inscribed, if not literally at least in the consciousness of the nation, the name of a great American engineer.

Nor are the footprints of the engineer to be found only on terra firma, but, as with Rockwell Kent's "Star-lighter," they may be seen along the sky itself. That splendid American youth, Lindbergh, out of our common life but with some remnant of the blood of the vikings still coursing in his veins, quietly determining on the great adventure, traversing the continent with but a single stop, lands unheralded amidst the jarring wrangles of his associate entrants in the contest. In a day or two he is off, and the world holds its breath. As I think of him far over the Atlantic, amidst darkness and storm, that immortal "We," the "Spirit of St. Louis" and the spirit of indomitable American youth at its best, and as I think what his journey has meant to the world, I recall Bryant's lines in "The Waterfowl"—

"There is a Power whose care
Teaches thy way along that pathless coast—
The desert and illimitable air—
Lone wondering, but not lost."

Coming down at LeBourget field the hearts of two continents beat swifter, and ancient friendships glow afresh in a distraught world. Only a few days ago, in the midst of an effort at reconciliation between the United States and Mexico, to the efforts of our representative, Morrow, is added suddenly a new element. Out of the sky comes the engineer—America's youthful herald of understanding, more potent than diplomacy, arousing the enthusiasm of two nations, and at this Christmas season sending ringing out of the sky as of old, the message of "Good will to men."

Isolation has been the target for nearly all these triumphs of man's inventive genius. Charles Dudley

Warner truly said that "isolation breeds conceit," and conceit is everywhere the foe of progress. The transatlantic cable, the cable and electric car, electricity, the telephone, the linotype, the internal-combustion engine, through its children aviation and the automobile, wireless, the radio, are all aimed squarely at the effacement of isolation. Besides the great men who have made these possible, and though less spectacular, their equal in dignity as an agency in the world's struggle for that understanding that is the basis of brotherhood, I place the road builder. It is he who across State and National boundaries brings face to face the great masses of mankind. He thus renders an immeasurable service in the cause of understanding and racial amity.

The day is coming rapidly when America's 20,000,000 motor cars may explore the hills and valleys of every State in the Union upon a first-class, modern highway. The people are ready, the motors purring, eager to be off, and, thanks to your service, great stretches of improved roads are unfolding like ribbons strung along the face of the continent. I am inclined to share the faith of an old fundamentalist friend of mine, who offers this in proof of the Prophet Nahum's clear vision of the twentieth century auto when he wrote 700 years B. C.: "The chariots rage in the streets. They rush to and fro in the broad ways. The appearance of them is like torches. They run like the lightnings." And, too, you may well claim Isaiah to be one with you in the spirit where he sings: "The crooked ways shall become straight and the rough places smooth."

Yes, indeed, the crooked misunderstandings, born of isolation and the rough judgments of sectionalism, shall be straightened out and smoothed away when the 115,000,000 under the American flag may come, thanks to your task well done, to know each other in an intimacy never before approached since creation.

A part of my purpose in speaking to you today is

to voice a full conception of how in a spectacular age you are called to work quietly, out of the limelight, day after day, mile after mile, in the rendition of the most significant service of which the American people are today the recipients. To a certain degree your position is that portrayed in Kipling's lines from "The White Man's Burden":

"The ports ye shall not enter,
The roads ye shall not tread,
Go make them with your living,
And mark them with your dead."

But what does the limelight really matter, after all? The great thing is to keep faith with the nation by efficient service. As you make your locations, fix your grades, drain your margins, lay your surfaces, fashion your curves, try to visualize, if you can, just how vital your place is in the building of a nation. How down the years you are sending your hundreds of thousands safely on their way upon endless errands of business, of mercy, of pleasure. How you are an agent in that wholesome decentralization of homes so desirable in an industrialized age. How suburban homes will stream along your highways with their blessing of sunshine and pure air, where children may bask in "the good, gigantic smile of the brown old earth." How little bereft country school houses will be swallowed up in great consolidated schools, as is rapidly occurring in my own State. How you will facilitate a nation's outing as your highways ramify through our national forests and penetrate the splendid park areas of the republic. How you have effaced consciousness of that thing so vital to my boyhood, namely, "the city limits." How you are bringing to the farmers of the nation the cultural advantages of the city and making it possible to deposit on his doorstep daily the news of the world. How, as notably in Connecticut, you are relegating the passenger train to districts of dense traffic, eliminating warehouses, preventing terminal congestion, providing delivery from zoning stations and in less than car lots, saving insurance, increasing speed of service, and saving enough in gas alone in 20 years to pave the road. These ends being achieved by motor traffic are only possible by reason of your service.

In the system of State and National road programs now under way literally billions of dollars are by the American people intrusted to your care and dependent upon the fidelity of your service. It is for you, as the trusted agent of the common people, who pay the taxes, to stand firmly against the greed of selfish interests on the one hand and the shifty machinations of the politician on the other. Let your service be commensurate with the importance of your task to the welfare of the nation, and that can not be exaggerated.

Rockwell Kent, in one of his most effective pictures, has drawn "The Star-lighter"—a tall, powerful and graceful figure, his torch held aloft, striding from constellation to constellation, setting alight the stars as "Night lets her sable curtain down." May we not picture in imagination something tintured with the same symbolism—the figure of the highway engineer traversing the continent, trailing in his wake the silvery pathways that shall indeed make our nation one. Today he is penetrating crowded cities and remote and lonely places, touching with his magic wand the pulse of 115,000,000 free citizens of the great republic, bringing delights, service, economies, unity that the world has never known. And not only with-

in our borders, but the day is approaching when, thanks to you, I may travel with my auto on an international trunk highway from Winnipeg to Cape Horn, and from Cairo to Cape Town. I can follow the route of Alexander, fill my radiator within the sacred precincts of the Garden of Eden, and touring leisurely under the shadow of Everest pick up the historic trail of the Grand Trunk and follow on to the Indian Ocean—following always "the footprints of the engineer." Making always for unity, acquaintance, understanding. Such are the possibilities of your service, such the dignity of your achievement.

A hint of the speed at which we in America are moving may be caught by a few figures which give a comparison of the sum total of American activity and achievement in a few lines during the nineteenth century, with our achievement in the same line during the decade 1910 to 1920:

The Wonderful Decade

Wealth of United States, 1900, \$88,000,000,000; increase decade, \$55,000,000,000.

American exports, nineteenth century, \$38,000,000,000; decade, \$45,000,000,000.

United States revenue collections, nineteenth century, 6½ billions; decade, 20 1/3 billions.

Copper mined United States, nineteenth century, 3 1/5 million tons; decade, 6 1/5 million.

Steel tonnage United States, nineteenth century, 95 million tons; decade, 335 million.

Stamps used, nineteenth century, 50 billion; decade, 122 billion.

Coal produced, nineteenth century, 4,500 million tons; decade, 5,700 million.

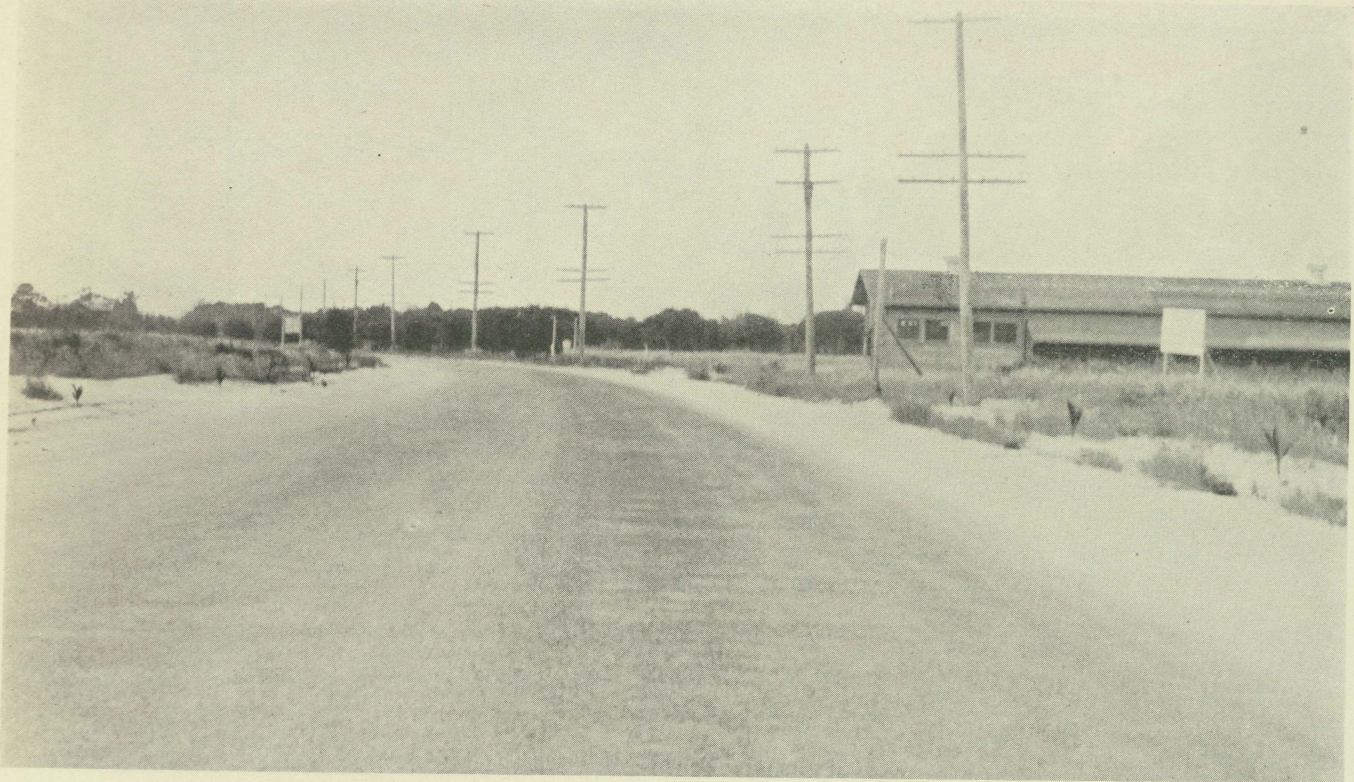
Spent public schools, nineteenth century, 5½ billion dollars; decade, 6 8/10 billion dollars.

Aluminum production, nineteenth century, 30 million tons; decade, 1,700 million.

Foreign commerce, all countries, nineteenth century, 35 billion dollars; decade, 39 billion dollars.

These striking figures mean more than the dollars involved. More significantly they are symbols of that multiplication of human contacts which is transforming the world. If any of you are disposed to feel, as do our friends in Russia, that they mean only the movement of humanity toward a thoroughly materialized world, let us consider for a moment what is the distinct motif that, if you will listen, you may hear ringing through the clanging chorus of our twentieth century civilization.

Seven hundred years before Christ, Antipater of Sidon prepared a kind of ancient Baedeker in which are listed the Seven Wonders of the World. Not long ago a questionnaire was sent to 1,000 persons thought best able to judge, asking them to list the seven wonders of our own time. Seventy per cent agreed on the answer as I will give it to you. Let us first list the seven ancient wonders: The Pyramids, giant structures built by slave labor for the tomb of a king; the Hanging Gardens of Babylon, built by Nebuchadnezzar to ease the nostalgia of a wife imported from the hill country to the level Euphrates plains; the Temple of Diana at Ephesus, whose followers sought to drown the voice of Paul as he preached in the streets of the city, crying, "Great is Diana of the Ephesians"; the Statue of Zeus at Olympia, by Phidias, standing 25 feet high in the temple; the tomb of Mausolus at Halicarnassus, erected by his queen, Artemesia, whence we get our word mausoleum; the Colossus of Rhodes, that giant bronze figure of the sun god Helios, standing 105 feet high for centuries



Project 641. Road 4, Palm Beach County

at the harbor entrance; the seventh, the Pharos Lighthouse, that threw its rays over the Mediterranean from the Harbor of Alexandria. Note that every one of the old-time Seven Wonders was something of stone or bronze, made by the hands of man, to gaze at and wonder.

Now, for the Seven Wonders of our own time. Note their character: Wireless, that is bringing the world in touch as never dreamed before; the telephone, that has annihilated distance in the transmission of the human voice; aviation, to whose influence for good I have already referred; antitoxins and antiseptics, whose service in alleviation of human suffering is immeasurable; radium, at whose magic touch certain forms of cancer are vanishing; the X-ray, whose humane service in both war and peace is beyond praise; and the solar spectrum, by which we link our finite minds to the great mysteries of the infinite. Is it mere chance that these Seven Modern Wonders, the proud symbols of twentieth century achievement, speak that hackneyed but divine message "service?" Rather let us be convinced that our time is best expressed in these magnificent achievements in which the material sinks into the background compared to the triumph in spiritual significance.

So I come to you today with the old appeal to catch the significance of your relation to the work of building a nation, your unequalled chance to cement the unity of American life, and that as the century goes on from one victory to another, as it will, in the footprints of the engineer, you may rightly feel that your footprints have helped to guide the nation to that destiny which is the goal of all our prayers.

In conclusion: Some twenty-five years ago I visited a valley in the mountains in the far Southwest, poignantly beautiful in its coloring but in its aridity devoid of life, the abode of desolation. Five years ago I again passed through that valley, now lovely beyond words, dotted with little homes nestling among the

foothills, green with fruitful vegetation, happy and in touch with all the world. Happiness, utility, beauty had marched into the valley following the footprints of Uncle Sam's engineers. You will know the change was potent, for it moved me to scrawl the following lines as the train roared onward to the coast:

The tawny, glistening, silent plain
Lies shimmering through ten thousand years;
The Indian's moaning cry for rain
Brings no response but his own tears.

The pack-train drags its weary way
Along the scorching leagues of sand,
The campfire at the end of day
The only cheer in all the land.

Upon the desert's margins far
The snow-clad mountains stand as guard
Beneath the silence of the star,
The desert wolf their only ward.

O gathering snow that blinds and chills!
O mocking streams that plunge and race!
O rivers lost among the hills!
O desolate, shimmering, silent place!

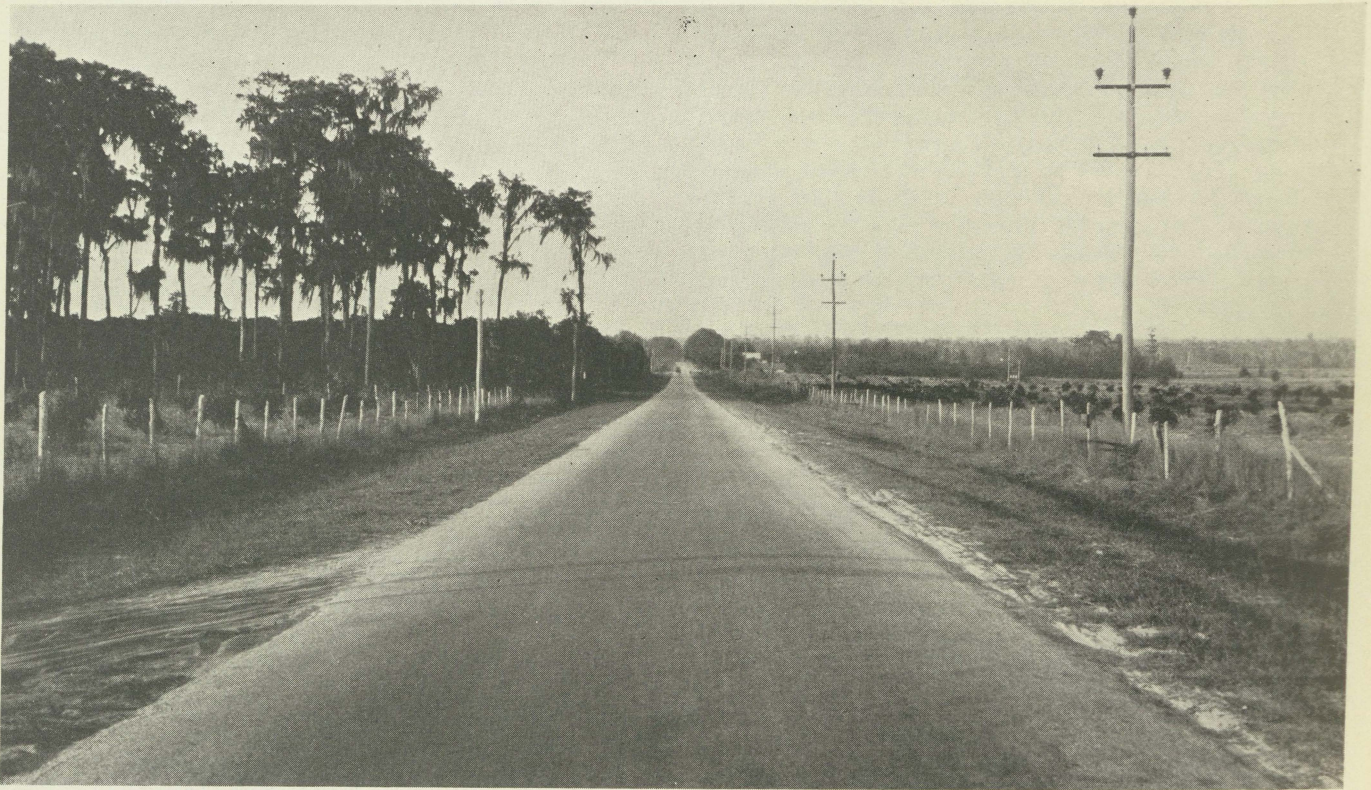
But look! One comes who dares to dream,
The pick and blast his magic wands,
And from the hills he leads the stream
And sends it laughing o'er the lands.

Lo! Desert sands are changed to gold;
Hope rules the ancient seat of Fear.
While reverent Wonder cries: "Behold!
The footprints of The Engineer."

—American Highways.

All Lit Up

Having been told that it was electricity that made his mother's hair snap when she combed it, Johnny bragged to a visitor: "We're a wonderful family, mother has electricity on her hair and grandma has gas on her stomach."—Wright Engine Builder.



Road 2. Surface Treatment, Near Lake Weir, Marion County

Federal Legislation Concerning Highways

THE bills given below have become law through the action of the Seventieth Congress. This is the largest amount of legislation for roads that has been made for several years and has many very important features. The amendments to the Federal Highway Act, while they do not include all the points requested by the American Association of State Highway Officials, are highly constructive and will advance the road work very materially.

The authorization for Federal funds extending over 1930 and 1931, while not as large as many people would desire, is a continuation of the present program and will stabilize conditions everywhere.

The only defeat suffered in road legislation was the veto of President Coolidge of S. 3674, which would have provided for \$3,500,000 a year for three years, namely, 1929, 1930, and 1931, to build roads through public lands and Indian lands. This legislation would affect the work in fourteen States. The President was induced to veto the bill through the attitude of the Bureau of the Budget on the ground that the States should contribute toward this work. This bill was an effort to meet the conditions in the States where the Federal Government is not building the main roads through its own property on anywheres near the same time program as is being accomplished by the States on the State systems. It is not necessary to say that this problem is not solved by a veto and Congress will hear again from this subject.

The legislation approved by the Congress and the President is as follows:

Authorizations for Federal Aid for 1930 and 1931

S. 2327 (Phipps-Dowell Bill)

To amend the Act entitled "An Act to provide that the United States shall aid the States in the construc-

tion of rural post roads, and for other purposes," approved July 11, 1916, as amended and supplemented, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purposes of carrying out the provision of the Act entitled "An Act to provide that the United States shall aid the States in the construction of rural post roads, and for other purposes," approved July 11, 1916, and all Acts amendatory thereof and supplementary thereto, there is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, the following additional sums, to be expended according to the provisions of such Act as amended:

The sum of \$75,000,000 for the fiscal year ending June 30, 1930.

The sum of \$75,000,000 for the fiscal year ending June 30, 1931.

Section 2. For carrying out the provisions of Section 23 of the Federal Highway Act, approved November 9, 1921, there is hereby authorized to be appropriated for forest roads and trails, out of any money in the Treasury not otherwise appropriated, the following additional sums, to be available until expended in accordance with the provisions of said Section 23:

The sum of \$7,500,00 for the fiscal year ending June 30, 1930.

The sum of \$7,500,00 for the fiscal year ending June 30, 1931.

Section 3. All Acts or parts of Acts in any way inconsistent with the provisions of this Act are hereby repealed, and this Act shall take effect on its passage.



Project 621. Surface Treated Sand Clay, Road 1, Okaloosa County

Amendments to Federal Highway Act S. 1341

(Oddie-Colton Bill)

Section 1. That Section 11 of the Federal Highway Act, approved November 9, 1921 (Forty-second Statutes at Large, page 212), as amended or supplemented, be further amended by adding at the end of the second paragraph thereof the following:

"And provided further, That in the case of any State containing unappropriated public lands and nontaxable Indian lands, individual and tribal, exceeding 5 per cent of the total area of all lands in the State in which the population, as shown by the latest available Federal census, does not exceed ten per square mile of area, the Secretary of Agriculture, upon request from the State highway department of such State, may increase the share payable by the United States to any percentage up to and including the whole cost on projects on the primary system of Federal-aid highways and on projects on the secondary system when the latter is a continuation of a route on the primary system or directly connects with a route on the primary system of an adjoining State, but such State shall allocate and expend during the same fiscal year upon some other project or projects on the Federal-aid system, under the direction of the Secretary of Agriculture, the amount it would have been required to expend upon such project."

Section 2. In every case in which, in the judgment of the Secretary of Agriculture and the highway department of the State in question, it shall be practicable to plant and maintain shade trees along the highways authorized by said Act of November 9, 1921, and by this Act the planting of such trees shall be included in the specifications provided in Section 8 of said Act of November 9, 1921.

Section 3. The system of Federal-aid highways on which Federal funds may be expended in any State

may exceed 7 per centum of the total highway mileage of such State by the mileage of roads on said system within national forests, Indian, or other Federal reservations therein.

Section 4. Federal funds may be expended on that portion of a highway or street within a municipality having a population of 2,500, or more, along which from a point on the corporate limits inwardly the houses average more than 200 feet apart: *Provided*, That no Federal funds shall be expended for the construction of any bridge within or partly within any municipality having a population of more than 30,000, as shown by the latest available Federal or State census; but this limitation shall not apply in the case of an interstate bridge, including approaches, connecting such municipality in one State with a point in an adjoining State which may be within a municipality having a population of not more than 10,000.

Section 5. All Acts or parts of Acts in any way inconsistent with the provisions of this Act are hereby repealed, and this Act shall take effect on its passage.—American Highways.

Another Broken Heart

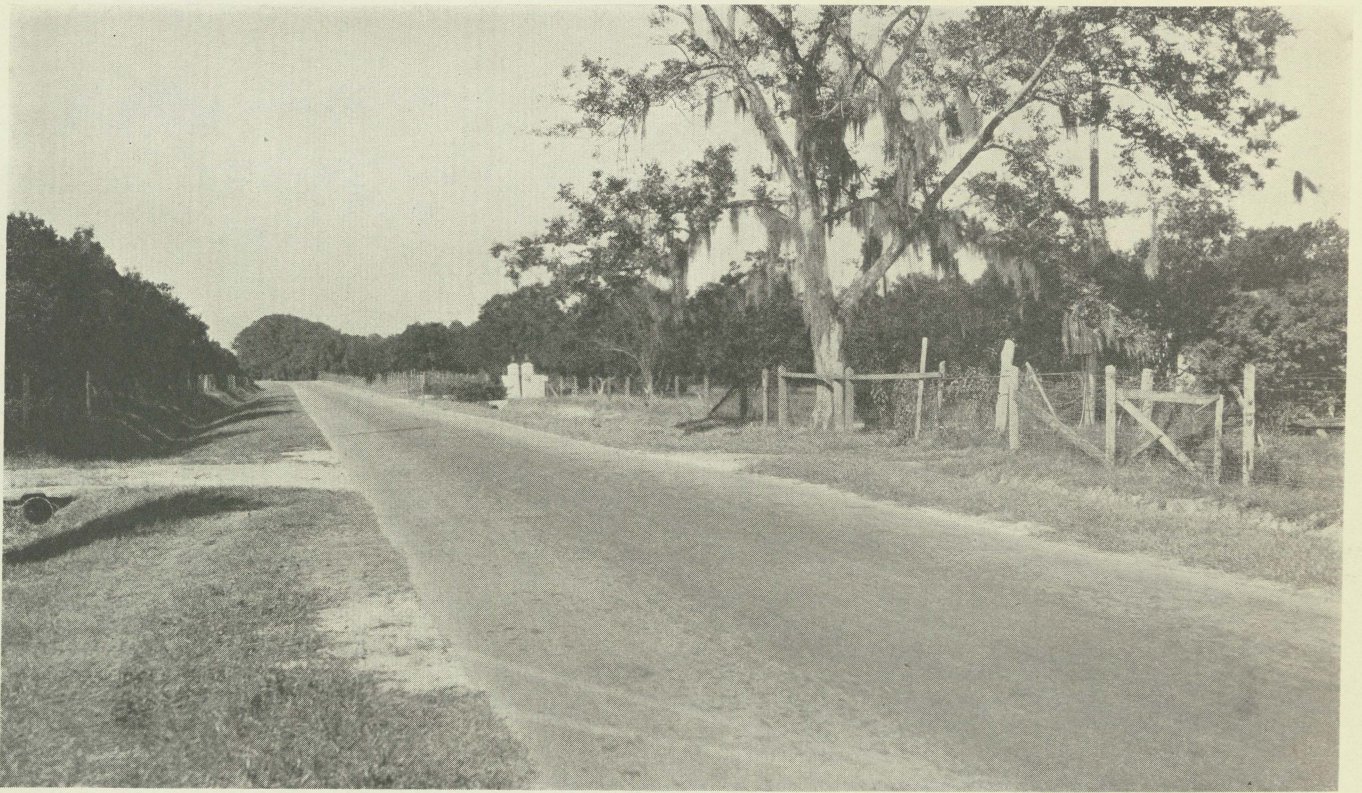
Motorist—"I'm sorry I ran over your hen. Would a dollar make it right?"

Farmer—"Wall, better make it two. I have a rooster that was mighty fond of the hen and the shock might kill him."—Alabama Highways.

Not in His Class

Speeding, eh? Judge—How many times have you been before me?"

Speeder—"Never, your Honor. I've tried to pass you on the road once or twice, but my bus will do only fifty-five."—Union Pacific Magazine.



Project 18. Road 3, Near Crescent City, Putnam County



Project 613. Road 5. 8-Inch Lime Rock Base, 3-Inch Sheet Asphalt, North of Sarasota

When State and City Come to Grips on Highway or Utility Plans

By **ALFRED BETTMAN**

THE state highway is beginning to produce serious difficulties for planning which will increasingly raise legal, political and practical problems for solution. Before the days of the automobile, the roads were in their legal status almost entirely local, city, town, township or county. If within the city, they were built by the city and called streets. If a city, by virtue of territorial growth, took in a road which theretofore had been a county highway, then, so far as lying within the city, that highway generally became legally and practically a city street. The county usually built the main highway outside the cities and towns.

The automobile, amongst its many substantial political and social effects, has tended to intensify the interest of the state in the highway problem and to bring into being in almost every state a deliberate and extensive state highway system connecting the towns and cities with each other and with the world outside, and the various parts of the state with each other and the world outside. Parts of these highway systems lie within the corporate limits of the towns and cities. Indeed, in many of the states the state is given the right to adopt existing city streets, though located and constructed by the city, are parts of the state highway system. With this privilege of entering the city with its own roads or incorporating parts of city streets into its own road system, the state, of course, assumes all or part of the cost of the construction. Necessarily, the state has more or less of a plan for its highway system layout. Obviously, however, the location of the state highway in the city might dislocate the city's own plan or produce problems of adjustment which require planning solution by the city itself. To what extent, if any, has the city the right, by means of its own plan, to control or be consulted about the location of parts of a state highway system which fall within its borders? Both the legal and political problems created by this important question have not as yet arisen to a sufficient degree to indicate the ultimate answers. There can be little doubt that the state has the constitutional right to free itself from such local control. Most existing state legislation, however, does provide for obtaining the city's consent for the location of any part of a state highway within the city limits. The city plan helps in determining this consent. Often the city is expected to help pay for the state highway, and the city's consent becomes necessary for that reason.

That, however, the problem does arise and will arise increasingly in the future, is illustrated and indicated by a situation in my own city of Cincinnati, Ohio. The case is so clear an illustration of the problem that some little detail about it is justified.

The state of Ohio had designated an old existing city street, known as Eighth Street, as part of the state highway system. A viaduct forming part of the street needed reconstruction. This viaduct was over a group of railroad tracks and a creek. The western end of the viaduct came back to the grade

of the street at a point which was on a level with an abutting industrial district.

The city plan called for the re-construction of this viaduct at its original length so as to preserve this industrial district, and also called for a new street, radiating from the end of the viaduct, so as to relieve a congested intersection further west. Just west of the viaduct there was a dip in the street. The state's plans called for a lengthening of the viaduct so as to carry it beyond this dip. This would impair the industrial district, as the street would run through it above its grade. To remedy this, the state's plans called for ramps connecting the industrial district with the raised street. In the opinion of the City planning Commission of the city, this would be detrimental for traffic, producing cross-currents of travel across the viaduct in question.

The state law required the City Council's consent. The city charter required a two-thirds vote in Council to overrule the planning commission. A majority of the City Council consented to the state's plans, but not two-thirds. The matter went to the courts, which held that the state was not subject to any such degree of control by the planning commission of the city or the charter of the city. The city will appeal to the next session of the State Legislature for an amendment of the law to require state highways within cities to comply with city planning procedures.

The increasing use of the state as the road-locating and road-constructing agency will produce maladjustments in city layouts, unless legal and political devices be developed for the prevention of such maladjustments by planning commissions, state or local. The Federal Government has little to do with roads or streets, but gives some financial aid and is required to approve of the location of roads which it aids. It also controls bridges over navigable streams and all public works within the water-lines of navigable streams. There is a case of a highway near Muskegon, Mich., which that city desired to build, including a bridge over a navigable stream. By reason of the accumulated laws, the highway was found to have the combined legal status of a city street, a county road, a state highway and a federal highway, and the approval of all four governments had to be obtained for the proposed location. After much delay and trouble, these approvals were obtained.

A city which has a plan and a strong will can usually win in its effort to obtain compliance with its plan. The obstacles created by the legal powers of non-municipal bodies over the locations of state, county or other non-municipal utilities succeed, when they do succeed more by breaking down the city's will power than by final legal control.

When the Federal Government and the Public Utilities Enter the Picture

Railroads in their operating actualities and their legal status are so predominantly inter-state in their

nature that the supervision of their location falls predominantly within the jurisdiction of the Federal Government, which, in this respect, acts through a board known as the Interstate Commerce Commission. Telegraphs, telephones, power transmission and other major transportation and communication facilities are in their legal status, if not always in their operating actualities, state rather than local in nature, and their location falls within state supervision, usually exercised by a board known as a public service commission or public utilities commission. These federal and state controls apply to the terminals, power-houses, and other facilities lying within the city, as well as to those outside the cities.

Traditionally, the consent of the city is required for the use of city streets, whether on the surface or below or above the surface. Similar consent is required for the crossing or vacation of streets or the opening of new streets. As the construction involved in these utilities and terminals within cities almost always includes some use of the surface of streets or the spaces below or above streets or the closing of streets, the consent of the city is usually required, and thereby the city is given the opportunity to greatly influence, if not always impose, an adjustment of these utility developments to the city plan.

Where, however, no use or interference with public ways or places is involved in a proposed utility construction, as for instance in the locating of stations or power-plants on private property, a considerable interference with the zoning plan of the city is obviously possible. The power of the city to subject to its own plan railroad structures authorized by the Federal Interstate Commerce Commission or telephone stations, power-stations and the like, authorized by state utility bodies, is an open and undetermined legal problem. These facilities are so customarily welcomed by the local communities and are so likely to be located in places inappropriate for residential developments, that contests on the subject are rare. The city which has a carefully wrought plan with a planning commission functioning intelligently and aggressively will, no doubt, usually succeed in getting the utility companies and the state and federal bodies which supervise them to be reasonable in making adjustments to the city plan. There are of course cases such as railroads insistent upon using spaces along waterways which the city plans for water transportation or recreation, or insisting upon occupying strips of lands which the city designs as a future parkway; but a careful plan is bound to have influence, however strong a legal power to break it may reside in the state or nation. The acute situations are more likely to arise from developments in territory for which plans have not been made or over which no planning commissions have been created than in territory already planned and over which the planning commission is functioning.—The American City.

You Tell 'Em

"See here," the Indian inspector declared, "it is a violation of the law now to have more than one wife, and the law must be obeyed. When you get back home you tell all of your wives, except one; that they can no longer look upon you as their husband."

"You tell 'em," suggested the Indian after a moment's reflection.

STUDY AND KNOWLEDGE

THERE is an old saying to the effect that when we become conscious of ignorance we are at the beginning of knowledge. Judged by this saying—in which there is much obvious truth—the concrete art appears to be in a most promising state, for its principal meeting of the year, held last week at Philadelphia, showed a live appreciation of the shortcomings of what is known today. It was clear from the meeting that a remarkable amount of study in concrete is in progress, and that important results continue to flow from this study, but, dissatisfaction with what has already been learned was even more strikingly evident. This dissatisfaction is the forerunner of improvement.

In a subject so many-sided and elusive as that of concrete, it is natural that views should diverge and dwell on many points rather than center obviously on the main problem. Yet it is easily possible to recognize that the real concern, the essential point of ignorance, relates to concrete quality. The call of the day is for better concrete. Nathan C. Johnson, who dealt forcefully with this theme, was hopeful enough to predict that if we will but make the demand insistent and undertake to search out the secrets of good concrete by truly scientific methods, an early success is assured. And many other papers and discussions at the meeting manifested a willingness—even an eagerness—to recognize that not all concrete is good. The spirit of the convention broadly was that of confident striving for better concrete, better not only in the laboratory sample but also in the field product.

There is a prodigious amount of research and study in progress now, dealing with individual properties of concrete, each of great importance, among them volume change, tightness and plastic flow. Taken together with the great amount of concrete research done in the past, it seems to justify the proud assertion of one of the speakers that concrete has been the subject of more engineering study and research than any other building material. But there is much more study still to come. The insistent demand for better concrete will not be satisfied by either slogans or partial solution. It calls for a more penetrating study of the nature of that protean composite around which a large part of the modern constructional arts have grouped themselves.

Meanwhile it is of unusual interest to observe the live attention given to the subject of workability. It was the theme of the most active session at the Philadelphia convention. Primarily a practical problem, since an intimately incorporated and smoothly handled mixture is necessary for good placing, it may yet prove to be related quite directly to the final result—the quality of the concrete. But for the time being we are in difficulty because there is no recognized method of measuring workability, and this in turn means, of course, that we do not know exactly what it is. It is not the same as mere softness; of that we are convinced. But beyond this one point we are uncertain.

This very uncertainty and the active study and work to which it gives rise promise an early classification of views and the development of real knowledge on workability. Possibly when we have this knowledge, we shall find that workable concrete has some fairly direct relation to good concrete—that is, permanent concrete. Certain it is that the seeking for workability will help us along the road to uniform concrete, which is more than half the answer to the problem of good concrete.—Engineering News Record.

Trans-Canadian Highway Route Traverses Upper Peninsula

THOUSANDS of American motorists have discovered that Canada has good roads besides fine scenery. Thousands have yet to learn they can cross the continent by way of Canada from coast to coast practically all the way.

When completed the trans-Canada highway will be upward of 5,000 miles in length, the longest road on the North American continent.

The trans-Canada highway is made up of the various provincial highways joined together, straightened out and improved to make a clear trail from one end of the dominion to the other. From this main artery run hundreds of feeder roads to the United States, to remote mountain and lake fastnesses, to wilderness and summer resorts.

Halifax, Nova Scotia, on the Atlantic seaboard is the starting point. From Halifax the road leads by way of Truro to Moncton, New Brunswick, where it branches into two sections. Through Nova Scotia there are numerous signs such as will be placed along the whole route, showing the directions to Vancouver and to Halifax.

Both sections from Moncton lead to Riviere du Loup in Quebec. One branch follows the Atlantic Coast and the outer boundry of the province. The other road runs along the border near Maine, passing through St. John, where the Boston-New York road joins.

Then there is once more only one road across Canada, hugging the south shore of the St. Lawrence river to Levis, opposite the citadel of old Quebec. A ferry takes the car across at this point to romantic Quebec. At this point there is a railway bridge

across the St. Lawrence, on which a \$400,000 motor road is under construction.

Down the St. Lawrence north shore past quaint old French-Canadian towns the road leads to Montreal. Montreal to Sault Ste. Marie is the next step along the Canadian highway. This route leads through Ottawa, the federal capital, along the Ottawa river, skirting Algonquin National park, through North bay and Sudbury, to the Soo.

There is a new road from North bay leading north to Cochrane and then west. This is the Ferguson highway, part of the proposed trans-Canada road. It runs through wild virgin territory, where fishing is plentiful and the virgin forest skirts both sides of the road in places. When completed it will pass north of Lake Superior, past Lake Nipigon to Winnipeg.

Another road from Montreal which is not part of the trans-Canada Highway but leads through the more settled part of Ontario, follows Lake Ontario to Toronto, thence to Niagara Falls, where the Buffalo road can be taken, or continuing through Canada to Windsor or Sarnia to connect with Detroit. These roads are in first class condition.

The proposed trans-Canada route from the Soo will skirt Lake Superior to Port Arthur and follow the Canadian National railway line to Winnipeg. It will connect with the northern route, Ferguson highway, near Lake Nipigon.

At present the route enters the United States from Sault Ste. Marie. The quickest way into Canada again is by way of Duluth to Emerson, Minn., on the



Road 1. Surface Treated Sand Clay, Holmes Creek

Jefferson highway, a straight road from the Gulf of Mexico to Winnipeg.

Across the prairies there is an excellent road to Regina, touching at Brandon, Manitoba. Much of this road is built of gumbo, a black clay, which is very good in dry weather but bad in wet weather. In Manitoba it is now gravelled to make it better for wet weather, and still farther west in Alberta a coating of tar and sand has proved substantial.

At Regina there is again a choice of roads. The northern road leads to Saskatoon, Edmonton and Jasper National park. This road is not yet finished. From Jasper park it will lead through the Rocky Mountains to Hope, B. C., and then to Vancouver.

The more traveled road runs from Regina to Medicine Hat, Calgary, Banff and Lake Louise, one of the beauty spots of the continent. Down the Windermere valley, through the Rocky Mountains the motor trail leads. Past Kootenay Lake, Cranbrook, then Kushonook, where a 65-mile ferry brings the car to Nelson. Eventually this ferry will be done away with.

Nelson is near the border of Washington, and the road leads along the boundry to Osoyoos, then up to Penticton, in a round about way to Lytton, at the head of the Fraser canyon. At the bottom of the canyon is Hope, and from there to Vancouver is a straight trail.

There are two tunnels in British Columbia through which motor traffic has to pass. They are at Lytton and at Hope.

At Vancouver the Pacific highway connects, thus giving a good road to San Francisco, Los Angeles and San Diego.—Michigan Roads and Pavements.

PERMANENT HIGHWAY MARKER DEvised FOR LINCOLN HIGHWAY

An entirely new and unique system will be employed for re-marking the Lincoln Highway this summer. Square concrete posts will be used.

On the side facing the motorist will appear an arrow, cast of blue concrete, directing whether he shall proceed straight ahead or turn to left or right.

On the face there will be the familiar, red, white and blue marker, each division being of concrete, above which there will be a bronze medallion of Lincoln, 4 inches in diameter, the Emancipator's head being encircled by "This Highway Dedicated to Abraham Lincoln." The medallion will simulate a coin in its general arrangement.

Early in the spring, announcement was made that designs for these markers were solicited. Many hundreds of plans were submitted and after careful comparison the Lincoln Highway Directors selected one offered by Jens Jensen, the famous architect at Ravinia, Ill.

Because of the many new problems presented in fabricating such a marker, the Portland Cement Association has volunteered to have its technical department supervise construction of the posts. They will necessarily all be cast at one place, thence sent forth in carload lots. Martin Hoffman, of the Detroit Cast Stone Company, was awarded the job

of manufacturing them because of his reputation for skill along the lines required.

The entire project is another of the object lessons promulgated by the Lincoln Highway Association in its desire to secure economy and safety in every branch of highway construction and operation.

This undertaking has been under consideration for several years, but the initial cost prevented until two sponsors of the Lincoln Highway,—Willys-Overland and General Motors,—both of whom have contributed to road building in the far west, offered to finance this new venture, which it is believed will eventually supplant present methods all of which require a heavy expense in maintenance.

The Lincoln Highway posts, being made of two imperishable substances, concrete and bronze, will last forever and will require no maintenance. The colors are not painted on, but are cast in the stone.—Michigan Roads and Pavements.

DIAMOND SET ROAD

THOSE concerned with the present high cost of road building will no doubt be interested to know that we have reached a plane of enviable economy as compared with some of the roads that have been built in the past.

A short time ago, some enterprising Europeans bought an old road that nobody seemed to mind selling. The purchase price, about eighty American dollars, was handed over to the Russian town of Swerdlovsk, and then the fun began. The buyers dug up the road, put the material into trucks, and when it was properly broken up and assorted, the material was appraised and found to be worth nearly half a million pounds sterling. The road had not been purchased out of mere philanthropy. A gem expert had noticed that huge blocks of jasper had been buried in the ground. Even lovely green malachite had been cracked for metal, and topaz and jade, too, had been crushed to build the road.

Nor were the Russians the only ones to make such a costly mistake. The most expensive macadam on record was that used at Kimberly, South Africa, when the streets of that city were first paved. The pavement was made of blue clay holding diamonds, and when the mistake was discovered and the road material washed and scraped, more than five million dollars worth of diamonds, some bigger than hazelnuts, were found.

England, too, has had her fling at expensive roads. Twenty-four years ago a part of Buckingham Palace road was built with camphor wood, one of the most rare and beautiful types of wood imported from the East Indies. Boxwood, which is so expensive that it costs several dollars for the material to make a small ornamental box, was tried in Piccadilly for a road, but the eccentric road-builder gave up the plan when he discovered that it would cost him almost twenty thousand pounds sterling to complete the road. Even the conservative French became extravagant in the matter of roads, when an eighth of a mile of street was laid with blocks of glass.—North Dakota Highway Bulletin.



Project 543. Complete Bituminous Macadam Paving with Concrete Curb and Gutter Within the City Limits of Sanford. Road.3.

Displaying the Flag

Fire Engineering for May, 1928, page 422, gives a page to summarizing the positions of the flag for various occasions, and accompanies each of these rules with an illustration:

1. Our flag should always have stars to the left of the picture, fabric floating to the right.
2. When hanging with the stripes in a vertical position against the wall, the stars should be in the upper left-hand corner.
3. When the flag is carried with other flags in a parade, it should always claim the place of honor—at the right.
4. On Memorial Day, May 30, the flag is displayed at half-staff from sunrise until noon and at full-staff from noon until sunset.
5. Never decorate a platform by twisting the flag into any fancy shape whatever.
6. To honor the passing of our flag, when in civilian clothes, stand at attention and place the hat with the right hand over the left breast.
7. No other flag should be hoisted above our flag except a church pennant, which is allowed to fly at the masthead above the stars and stripes when religious services are in progress in a military chapel or aboard a ship in our navy.
8. Bunting of the national colors should be used for covering a speaker's desk or draping over the front of a platform. The blue stripe should always be placed uppermost and the red at the bottom.
9. When used on a speaker's platform, the flag, if displayed flat, should be displayed above and behind the speaker. If flown from a staff, it should be to the right of the speaker.

10. When the flag is displayed in the church, it should be from a staff placed in the position of honor at the congregation's right as they face the clergyman.

11. When the United States flag is displayed with another flag with staffs crossed, it should be on the flag's own right.

12. When a number of flags are grouped and displayed from staffs, our flag should be in the center at the highest point of the group.

13. Do not drape the flag over the hood, top, sides, or back of a vehicle. When it is displayed on a motor car, the staff should be affixed firmly to the chassis, or clamped to the radiator cap.

FEDERAL HIGHWAYS TO HAVE BORDER OF TREES

Beautification of the highways of the United States now looms as a possibility which may be realized within a comparatively short span of years as the result of the Federal Highway Act providing for the planting and maintenance of shade trees along the Federal highway system.

An amendment to the Act provides that specifications for Federal-aid projects hereafter may include planting and maintenance of shade trees, this step being the first distinct departure from a Federal policy of appropriating only for the roadbed and directly kindred construction operations. The amendment is regarded by proponents of highway beautification as one of the greatest strides yet taken toward making the highways of the United States traffic lanes of distinct attraction.—Michigan Roads and Pavements.

Nomadic Americans

PROBABLY more than 40,000,000 American car owners will take the family car this summer and point its nose toward some spot the family has been reading or thinking about all winter. Some of these spots will be thousands of miles from home, others will be but a few hours' drive from the front walk. But averaging these trips by and large these nomadic car owners will spend along the way some \$3,500,000,000 in exchange for chicken dinners, waffles, gasoline, oil, repairs and broken springs.

Year by year the horde grows more numerous. Year by year the family trip lengthens out from a few miles to a few hundred and then a few thousand. As more and more families become acquainted with the pleasure in motoring carefree along our highways, trips increase in length, time on the road lengthens from days to weeks, and money spent mounts from a few dollars to several hundred.

In the old countries, motor touring is confined largely to two classes of tourists—those who drive from town to town and live in hotels, and those who set out for some distant point and drive swiftly to their destination.

In this country, however, the classifications are more numerous and by the same measure more interesting. There are those who desire to visit some park, city, relative, etc. Maps are consulted and a route which it is hoped will give the most comfort and least trouble is planned. The trip is a matter of getting to the end of the journey as quickly, but as interestingly, as possible. Then there is the motor tourist who has in mind several things to see and plans his tour to take in as many cities and points of interest as possible within the time limit. He may camp by night or patronize hotels along the way. He may cook most of his meals on a portable gasoline stove, or eat from lunch counters and hotel restaurants. Regardless of how he lives, he leaves many dollars behind him as he goes along. Another tourist is the true nomad who travels hither and yon across the land, by good roads and bad, spending weeks or months on tour. And there is the short tour traveler who makes many trips during the year, but is the freest spender since he has income to boost up his expenditures between trips.

But all of these tourists are becoming road wise. No longer are they content to travel from point to point without regard to the road. Trips are planned today with the condition of the road always to the fore and in most instances with the determination to stick to pavement as far as possible.

This road-mindedness can be capitalized. The travel bureau, or city, or historic spot desiring to attract tourists can point out how good its roads are and how easy it is to get there. Towns and cities are recognized as touring centers on the basis of the paved roads leading into and out of them. Even national parks and whole states enjoy favorable tourist patronage because of a large mileage of paved roads.—Concrete Highways and Public Improvements Magazine.

AMBITIOUS PROGRAM IN TEXAS

R. S. Sterling, chairman of the State Highway Commission of Texas, is advocating an ambitious road-building program for the Lone Star State. He wants to complete the state highway system during the next ten to twelve years instead of spreading the work over a period of forty years necessary under the present method of financing.

To this end he is conducting a campaign for issuance of \$300,000,000 to \$350,000,000, thirty-year state road bonds. Should this ambitious program be carried out, and it will take an amendment to the state constitution to make it possible, the proceeds of the bond issue would be expended at the rate of \$50,000,000 the first year, \$40,000,000 the second year, \$30,000,000 the third year, and \$20,000,000 each year thereafter through the year 1940. Money for interest and retirement of the bonds would be raised by means of a gasoline tax, a large part of which would be paid by tourists from other states. All counties would be reimbursed for money they have spent on state roads, thereby enabling counties to build badly needed local roads.

Such a program is startling until one begins to consider the enormous size of Texas, the fact that its road system comprises 20,000 miles of highway, and the leaps and bounds with which the state is increasing in wealth and population. The present gasoline tax of three cents a gallon provides about \$12,000,000 a year, which revenue would increase enormously with the advent of a state-wide system of good roads.

A construction program of this extent would give the road builders of the state all the work they could do for many years to come. It is to be hoped that should this long step be taken toward the ultimate destiny of Texas, contractors will insist on a fair profit for their work and investment. It is fatal to the contractor and not economy for the state to let contracts for road work at prices for which good work cannot be done.—The Earth Mover.

WORLD HIGHWAYS

A few years ago any man who predicted a network of improved highways and broad, paved roads reaching over the country to every State in the Union, with persons traveling thousands of miles in automobiles in safety and comfort, as is the case today, would have been called visionary, if not actually crazy.

Now the tourist and traveler can go almost anywhere in the United States on rubber tires over good roads. The Federal government and every State have been active in a big road-building program. Yet this is by no means the end. The United States, however is not the only country that is constructing highways. The time is coming when practically the whole world will be opened to the motorist.

Mexico now has a bureau of roads, the director of which was recently in this country conferring with Federal and State authorities concerning the development of highways in that country. A time is foreseen when a network of highways will open Mexico's resources and tourist attractions to motorists.

A British baronet, Sir Abe Bailey, who has become

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BIRMINGHAM, ALA.

rich in South Africa, announces a plan to build a highway four thousand miles long reaching from the Cape of Good Hope to the mouth of the Nile, the entire length of Africa from Cape Town to Cairo, with branches that would open up all Africa.

Other world highways that are contemplated are from Paris to Shanghai; from European capitals via Constantinople and Jerusalem to India; from the highways of the United States to Mexico City, Panama, Rio de Janeiro, Buenos Aires (the Paris of South America) and Valparaiso on the west coast. Mexico, Central and South America and parts of Canada in the Western Hemisphere and the continents of Africa and Asia in Eastern Hemisphere are still virgin territory for highway development.

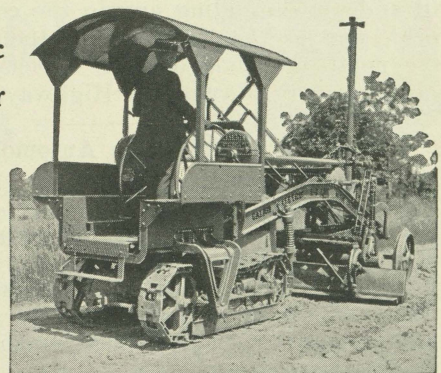
The idea of building highways to the uttermost parts of the earth may seem a trifle ambitious, particularly to persons who are familiar with the topography of Mexico and Central America. It is neither a simple nor an inexpensive task to build any kind of a road through some of the rocky mountain areas of these countries. Such a highway would necessitate a severe drain on the treasures of the cooperating nations. Yet there is no doubt but that such an artery of travel would serve to open up an entirely new field of profitable transportation between the countries of the New World.

Certainly some kind of a paved highway linking the neighbor nations of this hemisphere ought to be provided at the earliest opportunity. A hard-surfaced automobile road would be a great boon to the people of the countries concerned. There can be no doubt that it would greatly accelerate the

(Turn to next page)



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Contracts Awarded by State Road Department January 1st, 1928, to July 18th, 1928

Contractor—	Project No.	County—	Length Miles	Length Feet	Contract + 10 %	Type
Sutton Bros.	55-B	Alachua .....	.....	457	\$ 54,272.17	Concrete
General Const. Co.	677-D	Levy .....	.....	1,335	43,000.98	Timber
Frost Const. Co.	710-B	Hillsboro .....	.....	260	54,775.16	Concrete
Sutton Bros.	764-B	Suwannee .....	.....	113	19,043.82	Conc. Overh'd.
Duval Engr. & Contr. Co.	677-D	Levy	8.91	.....	110,370.35	R. B. S. T.
E. F. Powers Const. Co.	710-C	Hillsboro	12.69	.....	95,125.45	C. G. & G.
B. Booth	755	Polk	11.22	.....	58,518.86	C. G. & G.
Little & Lee	757	Polk	10.26	.....	63,516.17	C. G. & G.
Little & Lee	758	Polk	8.34	.....	46,380.34	C. G. & G.
Gilbert & Hadsock	732	Polk	8.94	.....	57,077.26	C. G. & G.
C. G. Kershaw Contr. Co.	736	Holmes	8.58	.....	45,097.93	C. G. & G.
C. G. Kershaw Contr. Co.	709	Holmes	9.09	.....	53,931.71	C. G. & G.
Morgan-Hill Paving Co.	61-C	Gadsden	9.77	.....	244,581.31	Concrete
Franklin Const. Co.	710-A	Hillsboro	6.18	.....	38,592.08	C. G. & G.
E. M. Chadbourne	697	Escambia .....	.14	666	3,401.25	Surface
Robert G. Lassiter & Co.	683-A	Palm Beach	8.04	.....	264,999.43	Concrete
Rutherford Const. Co.	695	Lake	3.00	.....	46,992.07	R. B. S. T.
S. G. Collins	827	Escambia	8.12	.....	50,151.29	C. G. & G.
M. C. Winterburn, Inc.	61-A	Gadsden	10.00	.....	231,578.27	Concrete
Phoenix Asphalt Paving Co.	669-X	Collier	9.40	.....	28,814.77	Surface T'd.
Everglades Const. Co.	62-C	Osceola	11.83	.....	115,303.71	C. G. & G.
A. D. Weeks	62-D	Osceola	12.62	.....	83,299.72	C. G. & G.
A. D. Weeks	62-A	Osceola	12.52	.....	66,571.01	C. G. & G.
R. C. Huffman Const. Co.	807-A	Palm Beach	10.81	.....	201,713.22	R. B. S. T.
R. C. Huffman Const. Co.	807-C	Palm Beach	6.14	.....	99,923.54	R. B. S. T.
C. A. Steed & Son, Inc.	804	Glades	18.55	.....	416,083.52	R. B. S. T.
Duval Engr. & Contr. Co.	659	Clay	7.25	.....	95,449.25	R. B. S. T.
Silas Gibson	815	Okaloosa	13.58	.....	60,680.23	C. G. & G.
W. J. Bryson Paving Co.	819	Okaloosa	4.69	.....	20,979.67	C. G. & G.
W. J. Bryson Paving Co.	823	Okaloosa	9.18	.....	34,085.34	C. G. & G.
W. J. Bryson Paving Co.	824	Okaloosa	9.81	.....	59,898.02	C. G. & G.
Perkins Const. Co.	820-B	Jefferson .....	.....	114	4,881.25	Timber
Maddox Foundry & Mach Co.	743	Bay .....	.....	120	13,774.47	Timber
C. C. Hayes	802-A	Okaloosa	8.67	.....	76,559.56	C. G. & G.
P. B. Alsobrook	661	Lake	0.10	.....	1,980.00	C. G. & G.
Collins Const. Co.	803	Okaloosa	11.13	.....	82,342.33	G. & D.
Total			269.56	3,065	\$3,043,745.51	

Nomadic Americans

(Continued from Page 19)

development of international trade in this half of the world, and the increased means of communication would hasten the development of the country and should serve to strengthen the bands of Pan-American friendship.

The men who vision highways to the distant points are no longer laughed to scorn. These highways will come, and they will do much to further good will and understanding among the countries of the world, just as the highways of the United States have made neighbors of the various communities in this country.—Arkansas Highways.

How to Judge an Automobile

Ask the salesman.
Twist the right front door handle.
Look at the instruments on the dash.
Kick the left rear tire.
Bend down and look at the floor beneath the car.
Poke a finger in the upholstery.
Place right foot on front bumper and push gently.
Light a cigar.
Ignore your wife's suggestions.
Step back ten feet, close the left eye and get the ensemble effect.
Ask the salesman again.—Judge.

New Model

Lost—Fox Terrier; rough coat; black on head, side tail.—Ad in a California paper.

Rigorous Training

"It's so difficult to do what's right all the time."
"Cheer up—the first ten commandments are the hardest."—M. I. T. Voo Doo.

A young bride asked her husband to copy a radio recipe she wanted. He did his best, but got two stations at once, one of which was broadcasting physical exercises and the other the recipe. This is what he took down:

"Hands on hips, place one cup of flour on the shoulders, raise knees and depress toes, and mix thoroughly in half a cup of milk. Repeat six times. Inhale quickly one-half teaspoonful of baking powder, lower the legs and mash two hard-boiled eggs in a sieve. Exhale, breathe naturally, and sift into a bowl.

"Attention! Lie flat on the floor and roll the white of an egg until it comes to a boil. In ten minutes remove from the fire and rub smartly with a rough towel. Breathe naturally, dress in warm flannels, and serve with fish soup.

Two Hands Free

Girl—"Let's drive in the park."

Boy—"Naw, let's park in the drive."—Ghost.

Engaged

First Married Man—"Allow me to present my wife to you."

Second Same—"Many thanks, but I have one."—Answers.

Southwest Corner

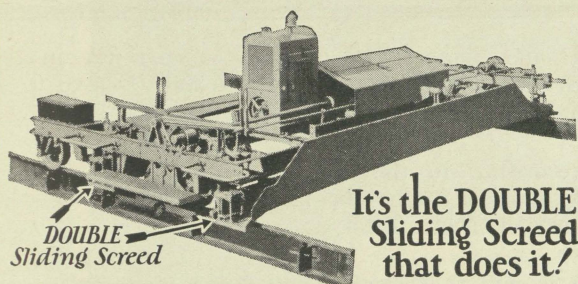
Attorney—"Where was the defendant milking the cow?"

Witness—"It's hard to describe, Judge, but if you'll bring in a cow, I'll show you the exact place."—Whirlwind.

Near But Yet So Far

Sign on a border restaurant near the Rio Grande in Texas: "Near Beer Sold Here and Real Beer Sold Near Here."

For a Smooth Road Surface and Permanent Structure—the ORD



It's the **DOUBLE Sliding Screed** that does it!

Every factor that produces a smooth riding surface and a permanent structure that will carry the heaviest traffic is provided in the ORD Concrete Road Finishing Machine. It permits the use of a high quality concrete, of a relatively dry mixture, preserves a uniform thickness in the slab, avoiding abrupt changes in the surface gradient, allows the concrete to settle into a thoroughly compacted mass and preserves this density because soft stone, shale and other light pieces are not displaced and brought to the surface.

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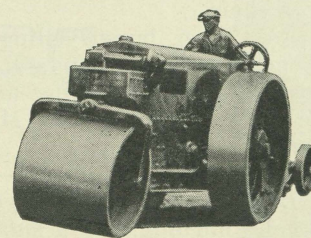
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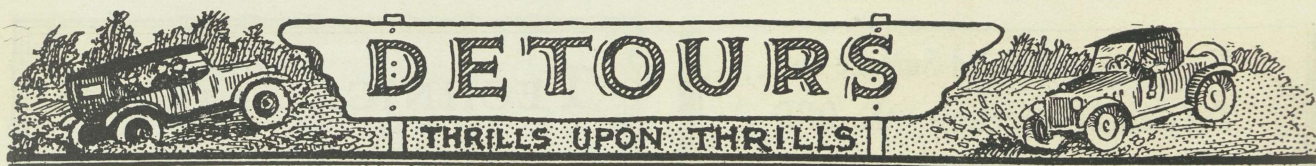
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Badger-broke

Lawyer—"The cross-examination did not seem to worry you much. Have you had previous experience?"

Client—"Six children!"—Staffordshire Sentinel.

The new Italian tennis champion is Gasolini. How do you suppose he ever survives a match?—Jackson News.

A bargain sale is an arrangement whereby a woman can ruin one dress and buy another.—Greenville Piedmont.

A professor says there are 200,000 useless words in the dictionary. But perhaps even these come handy in framing a political platform.—Florence (Ala.) Herald.

Herbert Hoover is a peanut hound. He buys several bags a day. Which may explain the ease with which he made the elephant eat out of his hand.—New York Sun.

King of the Highway

"My father's Mayor," bragged a small boy, "and when he rides in a parade the motor cops go ahead and he doesn't have to pay any attention to any traffic rules."

"That's nothing," sniffed his friend. "My father's a truck driver."—American Legion Monthly.

Decline the Verb "To Cuss"

The other man had darted to the door and with his pistol was gesturing the manager, John H. Cussen to a chair. . . .

As Cusser burst yelling from the door opposite them they leaped up and the four sped after the fugitives. . . . At police headquarters Cussed identified both men, as did Miss Reardon.—New York Times.

Detective stuff: When you pass a house and smell a cake burning, it's a sign the house is on a party line.—San Francisco Chronicle.

An American has made more than \$1,000,000 on lead pencils in Soviet Russia. This convinces us that at last the Bolsheviks are seriously undertaking to figure it out.—Portland Oregonian.

An explosive 30 per cent. more powerful than TNT has just been discovered and is expected to revolutionize Chicago elections.—New York Evening Post.

Desert Rat

First Student—"That girl you've started going with is a smart li'l gold-digger."

Second Pauper—"Then all I've got to say is, she's a darn poor geologist."—Colorado Do Do.

We read that Americans are sinking \$1,000,000,000 a year in dubious financial schemes. The principal one of which is keeping up with the neighbors.—Arkansas Gazette.

At one time codfish formed the currency in Iceland. We are very glad that we didn't have to go round with the plate in church.—Punch.

According to the ads in the health magazines, obesity seems to be the mother of invention.—New Brunswick (Ga.) Pilot.

It is said that wool is now being made from pine needles. It has always felt that way to a sensitive epidermis.—Florence (Ala.) Herald.

Now it appears what is needed is a rescue party to rescue rescue parties that get lost trying to rescue rescue parties.—Macon Telegraph.

The newspaper which expressed the wish that somebody would take Gene Tunney's set of Shakespeare away from him is hereby delegated as a committee of one to do it.—Lynchburg News.

The wets and drys are so far apart that the bootleggers have plenty of room to pass between.—Virginian-Pilot.

A lot of things that once were supposed to result in disgrace now result in a movie contract.—Arkansas Gazette.

Wife—"Look at that adorable hat in the window, John let's go buy it."

John—"Certainly, dear. Right by it."—Denison Flamingo.

L'il pickaninny,
Looks just like his poppy;
Don't know what to call him,
'Less it's Carbon Copy.
—Wisconsin Octopus.

Wigg—"Sorry to keep you waiting, old man; but I've just been setting a trap for my wife."

Wagg—"Heavens! What do you suspect?"

Wigg—"A mouse in the pantry."—Passing Show.

Peggy—"Daddy, what did the Dead Sea die of?"

Daddy—"Oh, I don't know, child."

Peggy—"Daddy, where do dreams go when you wake up?"

Daddy—"I don't know."

Peggy—"Daddy, why did God put so many bones in the fishes?"

Daddy—"I don't know that either."

Peggy—"Goodness, daddy, who made you an editor?"—Watchman Examiner.

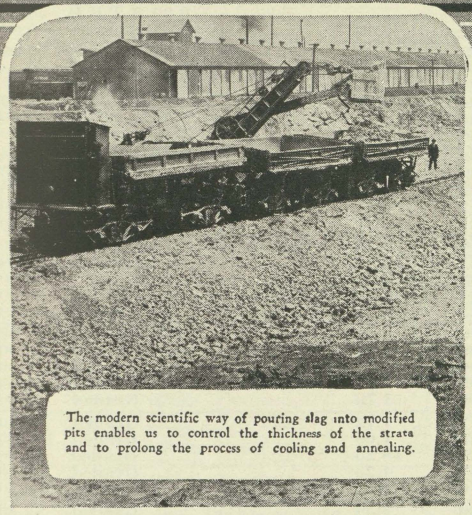
A woman teacher in trying to explain the meaning of the word "slowly," illustrated it by walking across the floor.

When she asked the class to tell her how she walked, she nearly fainted when a boy at the foot of the class shouted, "Bow-legged ma'am!"—Alabama Highways.

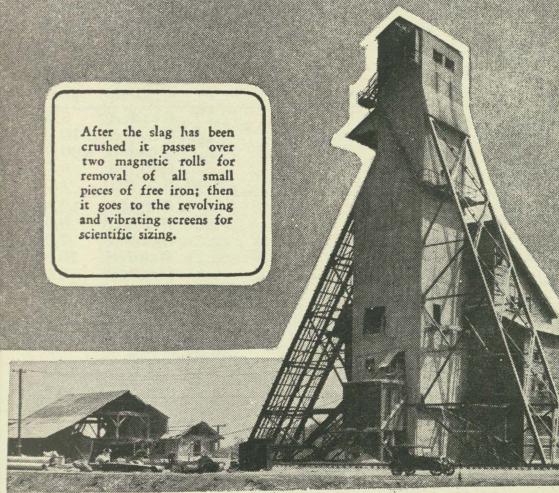


The pure molten slag—free from all dry refuse—is carried from the furnaces, 1000 feet away, in hot pots and poured under our direction into modified pits—dry slag canals.

Scientific Preparation!



The modern scientific way of pouring slag into modified pits enables us to control the thickness of the strata and to prolong the process of cooling and annealing.



After the slag has been crushed it passes over two magnetic rolls for removal of all small pieces of free iron; then it goes to the revolving and vibrating screens for scientific sizing.



EVERY step in the preparation of basic slag follows a definite, scientific procedure.

When slag is poured in thick strata, it breaks up in much more cubical pieces. You steady users of

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BASIC SLAG
CRUSHED & SCREENED

know how important that is. Also you know, from experience, that when slag is cooled slowly there is a marked increase in its solidity, toughness and strength.

That is why pure molten slag (free from all refuse) is poured under our direction into modified pits. This enables us to definitely control the thickness of the strata and definitely control the processes of cooling and annealing.

The final steps—crushing, screening and sizing—prepare the product for the particular project in which it is to be used.

Birmingham Slag Company

Slag Headquarters for the South

ATLANTA BIRMINGHAM JACKSONVILLE
THOMASVILLE MONTGOMERY Ocala, FLA.

Status of Construction

THROUGH APRIL 30th, 1928

Proj. No.	Contractor	Road No.	County	Total Length Miles	Clearing Miles	Grading Miles	Base Miles	Surface Miles	Per Cent Complete
50-A	L. M. Gray	14	Putnam	6.19			6.19	6.19 S.T.R.B.	100.00
52	W. J. Bryson Pav. Co.	1	Escambia	10.09	10.09	10.00		Graded	98.00
55	W. J. Bryson Pav. Co.	14	Alachua	16.77	16.77	15.93		Graded	96.00
61-A	M. C. Winterburn, Inc.	1	Gadsden	10.00				3.53 Concrete	33.40
61-C	Morgan-Hill Pav. Co.	1	Gadsden	9.77				2.93 Concrete	27.50
62-A	A. D. Weeks	24	Osceola	12.52	9.39	5.63		Graded	40.00
62-C	Everglades Const. Co.	24	Osceola	11.83	8.87	1.18		Graded	23.50
62-D	A. D. Weeks	24	Osceola	12.62	11.35	1.26		Graded	28.50
500-B	State Convict Forces	20	Bay	12.76	0.00	0.00		Graded	0.00
518	Barnes Const. Co.	5-A	Lafayette	17.75	17.04	14.55		Graded	81.00
535	L. B. McLeod Const. Co.	5-A	Lafayette	13.20	12.80	8.98		Graded	63.00
585	State Convict Forces	1	Santa Rosa	6.67	6.25	5.67		2.50 S.T.R.B.	60.00
592	State Convict Forces	10	Franklin	8.53			7.89	0.00 S.T.R.B.	85.00
615	E. F. Powers Const. Co.	5	Sarasota	11.92	11.92	11.92		Graded	95.00
624	L. B. McLeod Const. Co.	50	Hamilton	6.23	5.98	5.36		Graded	89.03
640-A	West Const. Co.	4	Martin	9.00			7.65	1.62 S. Asph.	52.00
640-B	West Const. Co.	4	Martin	11.80			8.26	7.67 S. Asph.	64.72
644-A	State Convict Forces	10	Wakulla	8.50			0.00	0.00 S.T.R.B.	0.00
644-C	State Convict Forces	10	Wakulla	5.06	3.69	3.29		Graded	54.00
645	State Convict Forces	10	Wakulla	18.50			16.50	14.00 S.T.R.B.	88.00
651	State Convict Forces	10	Gulf	14.72			12.50	11.77 S.T.R.B.	86.00
654	S. P. Snyder & Son	4	Broward	6.30	6.30	6.10	6.10	4.72 Bit. Mac.	85.00
659	Duval Engr. & Contr. Co.	3	Clay	7.25			6.23	0.00 S.T.R.B.	86.00
669-C	R. C. Huffman Const. Co.	27	Dade	12.00	12.00	12.00	12.00	0.00 S.T.R.B.	98.00
669-D	R. C. Huffman Const. Co.	27	Dade	12.31	12.31	12.31	12.31	0.00 S.T.R.B.	98.00
669-V	H. E. Wolfe	27	Collier	19.72	19.72	19.72	17.50	14.00 S.T.R.B.	82.00
669XZ	H. E. Wolfe Const. Co.	27	Collier	15.88			15.88	5.24 S.T.R.B.	87.00
677-D	N. B. Burton	13	Levy	3.05	3.05	2.94		Graded	90.00
677-D	Duval Engr. & Contr. Co.	13	Levy	8.91			6.24	0.00 S.T.R.B.	56.00
678	State Convict Forces	10	Bay	8.73	0.00	0.00		Graded	0.00
683-A	Robert G. Lassiter Co.	4	Palm Beach	9.04	6.83	1.85		1.85 Concrete	30.00
685	Deen, Yarborough, Ebersbach	10	Franklin	18.46	18.46	18.00		Graded	99.00
695	Samuel Vadner and Tampa Sand and Shell Co.	2	Lake	10.54	10.54	10.33		Graded	99.50
695	Rutherford Const. Co.	2	Lake	3.00			2.65	0.00 S.T.R.B.	83.00
706-B	Curry & Turner	28	Putnam	14.91	14.56	11.18		Graded	80.00
708	Hardee-Fisher Co., Inc.	11	Jefferson	7.98	7.98	7.98	7.98	7.18 Graded	91.00
709	C. G. Kershaw Contr. Co.	39	Holmes	9.09	9.09	4.63		Graded	55.00
710-A	Franklin Const. Co.	17	Hillsborough	6.18	3.94	4.98		Graded	64.00
710-C	E. F. Powers Const. Co.	17	Hillsborough	12.69	10.12	5.81		Graded	43.00
714	W. J. Bryson Pav. Co.	28	Union	10.21	10.21	10.21		Graded	100.00
715	Sellers Const. Co.	28	Union	3.70	3.66	3.53		Graded	98.00
716	Columbia Contr. Co.	28	Bradford	11.21	11.21	10.08		Graded	94.00
717	Southern Surety Co.	28	Bradford	11.02	11.02	9.90		Graded	94.20
720	Hardee-Fisher Co., Inc.	11	Jefferson	9.64	9.64	5.88		Graded	69.00
722	R. J. Carroll	48	Jefferson	8.83	8.83	3.62		Graded	58.00
723	L. B. McLeod Const. Co.	66	Leon	11.76	10.70	10.70		Graded	86.00
724	L. B. McLeod Const. Co.	66	Leon	11.10	6.99	3.33		Graded	24.00
726	State Convict Forces	19	Dixie	12.57	4.00	2.52		Graded	11.00
728	State Convict Forces	10	Leon	11.65	11.07	11.07		Graded	91.00
732	Gilbert & Hadsock	17	Polk	8.94	7.06	1.79		Graded	32.00
736	C. G. Kershaw Contr. Co.	39	Holmes	8.58	7.72	1.72		Graded	37.30
742	Little & Lee	13	Alachua	7.65	7.65	7.65		Graded	100.00
743	State Convict Forces	10	Bay	18.25	18.25	18.25		Graded	85.00
744	State Convict Forces	19	Madison	5.79	4.57	4.25		Graded	62.70
745	Convicts & Taylor County	19	Taylor	15.95	12.76	9.57		Graded	63.00
748	State Convict Forces	35	Madison	6.22	6.00	4.54		Graded	82.30
749	State Convict Forces	14	Gilchrist	7.81	7.42	.75		Graded	14.00
750	State Convict Forces	14	Gilchrist	12.97	6.35	0.00		Graded	6.00
755	B. Booth	17	Polk	11.22	8.97	5.27		Graded	54.00
757	Little & Lee	2	Polk	10.26	8.21	4.10		Graded	54.00
758	Little & Lee	2	Polk	8.34	7.59	5.00		Graded	69.00
763	A. E. Campbell	50	Suwannee	12.23	11.84	11.84		Graded	96.40
764	F. W. Simpson	50	Suwannee	12.00	12.00	11.52		Graded	96.86
765	F. W. Simpson	50	Suwannee	7.00	6.99	6.99		Graded	98.30
780	C. F. Walker	29	Okeechobee	11.00	10.12	.55		Graded	15.00
781	C. F. Walker	29	Okeechobee	11.00	7.70	.33		Graded	5.00
782	C. F. Walker	29	Okeechobee	6.62	2.65	.66		Graded	10.00
786	State Convict Forces	52	Jackson	6.76	6.76	6.76		Graded	100.00
798	State Convict Forces	13	Nassau	15.03	0.00	0.00		Graded	0.00
804	C. A. Steed & Sons, Inc.	67	Glades	18.56	5.57	1.86	0.00	0.00 S.T.R.B.	1.00
807-A	R. C. Huffman Const. Co.	25	Palm Beach	10.82	.97	.97	0.00	0.00 S.T.R.B.	12.00
807-C	R. C. Huffman Const. Co.	25	Palm Beach	6.14	0.00	0.00	0.00	0.00 S.T.R.B.	0.00
815	Silas Gibson	54	Okaloosa	13.58	8.15	.54		Graded	7.00
819	W. J. Bryson Pav. Co.	54	Okaloosa	4.44	1.11	.36		Graded	10.00
823	W. J. Bryson Pav. Co.	41	Okaloosa	9.18	4.13	0.00		Graded	9.00
824	W. J. Bryson Pav. Co.	41	Okaloosa	9.82	2.18	.34		Graded	4.70
827	S. G. Collins	—	Escambia	8.12	2.83	.49		Graded	6.00
Total complete April 30, 1928					2629.93	2484.47	1202.81	1872.05	
Complete month of April					87.31	46.22	12.52	36.92	
Total complete March 31, 1928					2542.62	2438.25	1190.29	1835.13	

TOTAL MILAGE COMPLETE

	Concrete	Brick	B. C.	S. A.	B. M.	Asph. Block	S.T.R.B.	S.T.S.C.	S. C.	Marl	Total
Complete to March 31, 1928	245.74	17.13	36.46	100.29	106.88	23.20	906.68	170.91	257.04	27.58	1891.91
Complete month of April	6.66			4.14	1.51		11.86	.51			24.68
Complete April 30, 1928	252.40	17.13	36.46	104.43	108.49	23.20	918.54	171.42	257.04	27.58	1916.59

Status of Construction

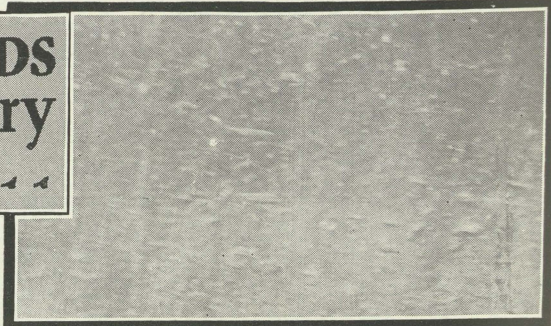
THROUGH MAY 31st, 1928.

Praj. No.	Contractor	Road No.	County	Total Length Miles	Clearing Miles	Grading Miles	Base Miles	Surface Miles	Per Cent Complete
52	W. J. Bryson Paving Co.	1	Escambia	10.09	10.09	10.00		Graded	98.00
55	W. J. Bryson Paving Co.	14	Alachua	16.77	16.77	15.93		Graded	96.00
61-A	M. C. Winterburn, Inc.	1	Gadsden	10.00				6.60 Concrete	60.70
61-C	Morgan-Hill Paving Co.	1	Gadsden	9.77				5.86 Concrete	54.50
62-A	A. D. Weeks.	24	Osceola	12.52	11.27	6.88		Graded	60.00
62-C	Everglades Const. Co.	24	Osceola	11.83	9.46	1.77		Graded	35.00
62-D	A. D. Weeks.	24	Osceola	12.62	11.35	2.90		Graded	48.00
500-B	State Convict Forces	20	Bay	12.76	5.00	5.00		Graded	27.00
518	Barnes Const. Co.	5-A	Lafayette	17.75	17.75	15.97		Graded	90.00
535	L. B. McLeod Const. Co.	5-A	Lafayette	13.20	12.94	10.43		Graded	71.00
585	State Convict Forces	1	Santa Rosa	6.67	6.67	6.00		5.79 S.T.S.C.	80.00
592	State Convict Forces	10	Franklin	8.53			8.54	0.00 S.T.R.B.	85.00
615	E. F. Powers Const. Co.	5	Sarasota	11.92	11.92	11.92		Graded	100.00
624	L. B. McLeod Const. Co.	50	Hamilton	6.23	6.23	5.67		Graded	94.32
640-A	West Const. Co.	4	Martin	9.00			9.00	4.02 S. Asph.	73.00
640-B	West Const. Co.	4	Martin	11.80			10.03	8.02 S. Asph.	75.70
644-A	State Convict Forces	10	Wakulla	8.50			1.20	0.00 S.T.R.B.	14.00
644-C	State Convict Forces	10	Wakulla	5.06	3.74	3.44		Graded	64.00
645	State Convict Forces	10	Wakulla	18.50			18.50	15.50 S.T.R.B.	92.00
651	State Convict Forces	10	Gulf	14.72			13.98	11.77 S.T.R.B.	94.80
654	S. P. Snyder & Son.	4	Broward	6.30	6.30	6.10	6.10	5.98 Bit. Mac.	94.00
659	Duval Engr. & Contr. Co.	3	Clay	7.25			7.25	0.00 S.T.R.B.	86.00
669-C	R. C. Huffman Const. Co.	27	Dade	12.00	12.00	12.00	12.00	0.00 S.T.R.B.	98.00
669-D	R. C. Huffman Const. Co.	27	Dade	12.31	12.31	12.31	12.31	0.00 S.T.R.B.	98.00
669-V	H. E. Wolfe Const. Co.	27	Collier	19.72	19.72	19.72	19.72	14.00 S.T.R.B.	90.00
669XZ	H. E. Wolfe Const. Co.	27	Collier	15.88			15.88	10.16 S.T.R.B.	94.00
667-D	N. B. Burton	13	Levy	3.05	3.05	3.05		Graded	100.00
677-D	Duval Engr. & Contr. Co.	13	Levy	8.91			6.24	0.00 S.T.R.B.	56.00
678	State Convict Forces	10	Bay	8.73	8.00	6.50		Graded	75.00
683	Robert G. Lassiter & Co.	4	Palm Beach	9.04	6.83	3.38		3.38 Concrete	42.00
685	Deen, Yarborough, Ebersbach.	10	Franklin	18.46	18.46	18.46		Graded	100.00
688	State Convict Forces	10	Bay	9.32	0.00	0.00		Graded	0.00
695	Vadner & Tampa Sand & Shell Co.	2	Lake	10.54	10.54	10.33		Graded	99.50
695	Rutherford Const. Co.	2	Lake	3.00			2.70	1.50 S.T.R.B.	93.00
706-B	Curry & Turner.	28	Putnam	14.91	14.56	12.22		Graded	82.00
708	Hardee-Fisher Co., Inc.	11	Jefferson	7.98	7.98	7.90		Graded	99.00
709	C. G. Kershaw Const. Co.	39	Holmes	9.09	9.09	6.45		Graded	61.90
710-A	Franklin Const. Co.	17	Hillsborough	6.18	6.18	5.36		Graded	78.00
710-C	E. F. Powers Const. Co.	17	Hillsborough	12.69	11.12	6.81		Graded	53.00
715	Sellers Const. Co.	28	Union	3.70	3.70	3.63		Graded	98.40
716	Columbia Contr. Co.	28	Bradford	11.21	11.21	10.31		Graded	95.30
717	Southern Surety Company.	28	Bradford	11.02	11.02	11.02		Graded	100.00
720	Hardee-Fisher Co., Inc.	11	Jefferson	9.64	9.64	7.23		Graded	85.00
722	R. J. Carroll.	48	Jefferson	8.83	8.83	4.35		Graded	61.00
723	L. B. McLeod Const. Co.	66	Leon	11.76	10.70	10.70		Graded	88.00
724	L. B. McLeod Const. Co.	66	Leon	11.10	8.10	5.33		Graded	39.00
726	State Convict Forces	19	Dixie	12.57	4.42	3.79		Graded	25.00
728	State Convict Forces	10	Leon	11.07	11.07	11.07		Graded	91.00
732	Gilbert & Hadsoc	17	Polk	8.94	8.85	4.11		Graded	56.00
736	C. G. Kershaw Contr. Co.	39	Holmes	8.58	7.72	2.57		Graded	40.00
743	State Convict Forces	10	Bay	18.25	18.25	18.25		Graded	85.00
744	State Convict Forces	19	Madison	5.79	5.50	4.68		Graded	77.00
745	Convicts and Taylor County	19	Taylor	15.95	14.36	11.96		Graded	71.70
748	State Convict Forces	35	Madison	6.22	6.00	5.29		Grade I	88.15
749	State Convict Forces	14	Gilchrist	7.81	7.42	1.01		Graded	25.00
750	State Convict Forces	14	Gilchrist	12.97	7.13	.91		Graded	8.00
755	B. Booth	17	Polk	11.22	10.10	8.86		Graded	80.00
757	Little & Lee	2	Polk	10.26	10.26	6.36		Graded	72.00
758	Little & Lee	2	Polk	8.34	8.34	6.00		Graded	75.00
763	A. E. Campbell	50	Suwannee	12.34	12.34	11.84		Graded	97.60
764	F. W. Simpson	50	Suwannee	12.00	12.00	11.52		Graded	98.50
765	F. W. Simpson	50	Suwannee	7.00	6.99	6.99		Graded	100.00
780	C. F. Walker.	29	Okeechobee	11.00	10.67	2.20		Graded	46.00
781	C. F. Walker.	29	Okeechobee	11.00	9.35	2.20		Graded	22.00
782	C. F. Walker.	29	Okeechobee	6.62	4.30	1.85		Graded	26.00
798	State Convict Forces	13	Nassau	15.03	5.00	0.00		Graded	8.00
804	C. A. Steed & Sons, Inc.	67	Glades	18.56	16.70	4.64		S.T.R.B.	10.00
807-A	R. C. Huffman Const. Co.	25	Palm Beach	10.82	8.65	4.33		0.00 S.T.R.B.	30.00
807-C	R. C. Huffman Const. Co.	25	Palm Beach	6.14	0.00	0.00	2.49	0.00 S.T.R.B.	0.00
815	Silas Gibson	54	Okaloosa	13.58	10.15	1.54	0.00	0.00 S.T.R.B.	12.00
819	W. J. Bryson Paving Co.	54	Okaloosa	4.44	2.11	1.36		Graded	21.00
823	W. J. Bryson Paving Co.	41	Okaloosa	9.18	6.43	1.84		Graded	27.80
824	W. J. Bryson Paving Co.	41	Okaloosa	9.82	2.95	1.46		Graded	23.40
827	S. G. Collins.	—	Escambia	8.12	5.83	2.59		Graded	25.00
Total complete May 31st, 1928					2696.04	2550.24	1216.94	1894.80	
Complete month of May					66.11	65.77	14.13	22.75	
Total complete April 30th, 1928					2629.93	2,484.47	1202.81	1872.05	

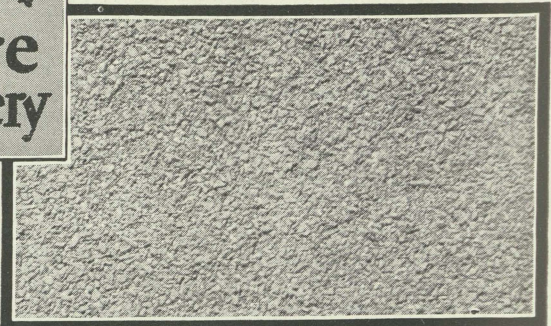
TOTAL MILEAGE COMPLETE

	Concrete	Brick	B. C.	S. A.	B. M.	Asph. Block	STRB	STSC	SC	Marl	Total
Complete to April 30, 1928	252.40	17.13	36.46	104.43	108.49	23.20	918.54	171.42	257.04	27.58	1916.59
Complete month of May	6.32			2.97	.57		9.75	1.34			20.95
Complete to May 31st, 1928	258.72	17.13	36.46	107.40	109.06	23.20	928.29	172.76	257.04	27.58	1937.54

**Some ROADS
are slippery
when wet**



**Tarmac
ROADS are
never slippery**



Tarmac ROADS *are Skidproof*

THESE unretouched photographs show graphically the difference between two different road surfaces.

The one shown at the bottom is Tarmac. It has a granular, mosaic surface. It is smooth-riding, but it has the power to grip the tires; to give traction to a car; to prevent skidding. You can see that from the photograph.

And the difference goes deeper than the surface. Tarmac does not lie on the surface like a mat. It penetrates the road, binding the aggregate firmly together. It gives a road stability.

You cannot buy for less money a bituminous road material that will give as good results as Tarmac. Write for detailed specifications covering its various uses.

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